Catalogue no. 91-209-XPE

Report on the Demographic Situation in Canada 1998-1999

Current Demographic Analysis

- Relative income, opportunity cost and fertility changes
- Dependence-free and health-adjusted life expectancy
- Ethnic mobility and demographic growth of aboriginal populations

Statistics Canada Statistique Canada

Canada

Data in many forms

Statistics Canada disseminates data in a variety of forms. In addition to publications, both standard and special tabulations are offered. Data are available on the Internet, compact disc, diskette, computer printouts, microfiche and microfilm, and magnetic tape. Maps and other geographic reference materials are available for some types of data. Direct online access to aggregated information is possible through CANSIM, Statistics Canada's machine-readable database and retrieval system.

How to obtain more information

Inquiries about this product and related statistics or services should be directed to: Research and Analysis Section, Demography Division, Statistics Canada, Ottawa, Ontario, K1A 0T6 (telephone: (613) 951-2326) or to the Statistics Canada Regional Reference Centre in:

Halifax	(902) 426-5331	Regina	(306) 780-5405
Montréal	(514) 283-5725	Edmonton	(780) 495-3027
Ottawa	(613) 951-8116	Calgary	(403) 292-6717
Toronto	(416) 973-6586	Vancouver	(604) 666-3691
Winnipeg	(204) 983-4020		

You can also visit our World Wide Web site: http://www.statcan.ca

Toll-free access is provided **for all users who reside outside the local dialling area** of any of the Regional Reference Centres.

National enquiries line	**1 800 263-1136**
National telecommunications device for the hearing impaired	**1 800 363-7629**
Order-only line (Canada and United States)	**1 800 267-6677**
Fax order line (Canada and United States)	**1 877 287-4369**

Ordering/Subscription information

All prices exclude sales tax

Catalogue no. 91-209-XPE, is published annually as a standard paper product for $31.00 in Canada. Outside Canada the cost is US$31.00.

Please order by mail, at Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6; by phone, at **(613) 951-7277** or **1 800 700-1033**; by fax, at **(613) 951-1584** or **1 800 889-9734**; or by Internet, at order@statcan.ca. For changes of address, please provide both old and new addresses. Statistics Canada products may also be purchased from authorized agents, bookstores and local Statistics Canada offices.

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact your nearest Statistics Canada Regional Reference Centre.

Statistics Canada
Demography Division

Report on the Demographic Situation in Canada 1998-1999

Current Demographic Analysis

Alain Bélanger
with the collaboration of Stéphane Gilbert

Published by authority of the Minister
responsible for Statistics Canada

December 1999

Catalogue no. 91-209-XPE

Frequency: Annual

ISSN 0715-9293

Ottawa

The text was originally written in French.
La version française de cette publication est disponible sur demande (n° 91-209-XPF au catalogue).

Note of appreciation

Canada owes the success of its statistical system to a longstanding co-operation involving Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Symbols

- .. figures not available.
- ... figures not appropriate or not applicable.
- \- nil or zero.
- -- amount too small to be expressed.

The data analysed in this report were those available at time of writing.

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences - Permanence of Paper for Printed Library Materials, ANSI Z39.48 - 1984.

∞

For further reading

Selected publications from Statistics Canada

Title	Catalogue
Demographic Documents, Occasional	91F0015MPE
Annual Demographic Statistics, 1998	91-213-XPE
Health Reports, Quarterly	82-003-XPB

To order a publication you may call 1-613-951-7277 or use facsimile number 1-613-951-1584. For toll free in Canada only call 1-800-267-6677. When ordering by telephone or facsimile a written confirmation is not required.

Preface

The first part of the ***Report on the Demographic Situation*** provides a complete review of current demographic change in Canada. It contains a detailed analysis of the most recent trends in fertility, mortality and migration in Canada. The emphasis is on commentary and explanations of the changes observed.

As to the second part, the ***Report on the Demographic Situation*** has changed its form somewhat. This year, the second part consists of three articles, and hence it deals with more than one topic. The first article looks at changes in fertility in relation to changes in the relative incomes of young males and the wage of young females. The second article takes stock of the change in dependence-free life expectancy in Canada over the past decade, a topical issue in light of our rapidly aging population. The last article examines the components of the sizable increase in Canada's aboriginal populations during the period 1986-1996.

Ivan P. FELLEGI

Chief Statistician of Canada

Current Demographic Analysis

In the same series:

REPORT ON THE DEMOGRAPHIC SITUATION IN CANADA
(Catalogue no. 91-209-XPE)

- ***1983 Report***, by J. Dumas - (130 pages - Out of print)

- ***1986 Report,*** by J. Dumas with the collaboration of R. Lachapelle - (138 pages - Out of print)
  - -Childbearing Performance of Married Canadian-born Women
  - -The Fertility of Single Women
  - -The Strengthening of Majority Positions

- ***1988 Report,*** by J. Dumas with the collaboration of C.F. Grinstaff - (157 pages - $21.00)
  - -The Termination of Pregnancy in a Population Perspective
  - -Long-term Consequences of Adolescent Marriage and Fertility

- ***1990 Report***, by J. Dumas - (112 pages - $26.00)
  - -Recent Evolution of the Canadian and American Populations

- ***1991 Report***, by J. Dumas with the collaboration of A. Bélanger and C. Fortier - (181 pages - Out of print)
  - -Overview of the Principal World Migratory Flows Since World War II

- ***1992 Report***, by J. Dumas with the collaboration of Y. Lavoie - (157 pages - $26.00)
  - -Age Structure in Mutation - Two Centuries of Demographic Change

- ***1993 Report***, by J. Dumas - (221 pages - $26.00)
  - -Mexico's Demographic Challenges (An Overview)

- ***1994 Report***, by J. Dumas and A. Bélanger - (151 pages - Out of print)
  - -The Sandwich Generation: Myths and Reality

- ***1995 Report***, by J. Dumas and A. Bélanger with the collaboration of G. Smith - (195 pages - $30.00)
  - -Demographic Similarities and Differences between Ontario and Quebec

- ***1996 Report***, by J. Dumas and A. Bélanger with the collaboration of G. Smith - (186 pages - $30.00)
  - -Common-Law Unions in Canada at the End of the 20th Century

Current Demographic Analysis

In the same series (continued):

REPORT ON THE DEMOGRAPHIC SITUATION IN CANADA - Concluded (Catalogue no. 91-209-XPE)

- *1997 Report*, by A. Bélanger and J. Dumas with the collaboration of C. Oikawa and L. Martel - (185 pages - $30.00)
  -Effects of the Social Environment of Elderly Persons on their Socio-Economic Condition

OCCASIONAL

- *Fertility in Canada: from Baby-boom to Baby-bust*, by A. Romaniuc - (Catalogue no. 91-524E, 1984, 156 pages - Out of print)
- *Income of Immigrants*, by R. Beaujot, K.G. Basavarajappa and R.B.P. Verma - (Catalogue no. 91-527E, 1988, 101 pages - $20.00)
- *Caribbean Immigrants*, by A.H. Richmond - (Catalogue no. 91-536E, 1989, 85 pages - Out of print)
- *New Trends in the Family,* by B. Ram - (Catalogue no. 91-535E, 1990, 96 pages - Out of print)
- *Marriage and Conjugal Life in Canada*, by J. Dumas and Y. Péron - (Catalogue no. 91-534E, 1992, 154 pages - Out of print)
- *Aging of the Population and Seniors in Canada,* by B. Desjardins - (Catalogue no. 91-533E, 1993, 128 pages - Out of print)
- *Family over the Life Course*, by R. Beaujot, E.M. Gee, F. Rajulton and Z.R. Ravanera - (Catalogue no. 91-543E, 1995, 173 pages - Out of print)

Current Demographic Analysis

In the same series (concluded):

DEMOGRAPHIC DOCUMENTS
(Catalogue no. 910015MPE)

- Document no. 1: "*Fertility Projections for Canada, Provinces and Territories, 1993-2016*" by R.B.P. Verma, S. Loh, S.Y. Dai and D. Ford - (1996, 28 pages, $10.00)
- Document no. 2: "*The Population in Collective Dwellings: Canada, 1971-1991*" by G. Smith - (1996, 50 pages, $10.00)
- Document no. 3: "*New Birth Cohort Life Tables for Canada and Quebec, 1801-1991*" by R. Bourbeau, J. Légaré and V. Emond - (1997, 94 pages, $10.00)
- Document no. 4: "*Advantages of the One Year Mobility Variable for Breaking Down Interprovincial Migration by Age, Sex and Marital Status*" by M. Bédard and M. Michalowski - (1997, 58 pages, $10.00)
- Document no. 5: "*A Review of Procedures for Estimating the Net Undercount of Censuses in Canada, the United States, Britain and Australia*" by D. Kerr - (1998, 28 pages, $10.00)

Acknowledgements

The author is grateful to all those who have contributed to this publication. In particular, the author addresses his thanks to professors Roderic Beaujot and Robert Bourbeau for their complete revision of the two parts of this *Report* and also Réjean Lachapelle, Don Kerr, Denis Morissette, Jean-Marie Berthelot, Russel Wilkins, Jean Dumas and René Morissette for their comments and suggestions on different sections. Claude Langlois of Immigration and Citizenship Canada has read and commented the section on international immigration. Specials thanks are addressed to Carol D'Aoust, research assistant, for his dedication and initiative which are fully appreciated.

Table of Contents

List of Tables

List of Tables - Continued

List of Tables - Concluded

Page

An Analysis of the Change in Dependence-Free Life Expectancy in Canada Between 1986 and 1996

Ethnic Mobility and the Demographic Growth of Canada's Aboriginal Populations from 1986 to 1996

List of Figures

List of Figures- Concluded

Highlights

PART I

- Population growth in 1997 (10.7 per thousand) was the lowest in Canada since 1985. Nevertheless, Canada's population growth is high compared to its political and economic partners, chiefly because of the importance that it assigns to immigration.

- Alberta, and to a lesser extent Ontario, are the Canadian provinces with the strongest growth; by contrast, Newfoundland is steadily losing population.

- In 1998, the new territory of Nunavut had just over 26,400 inhabitants, most of them Inuit.

xxx

- Even fewer Canadian women and men married or remarried in 1997 than in 1996, continuing the downward trend. Furthermore, those who did so were older on average.

- The number of marriages fell the most in the Maritime provinces, British Columbia and Ontario. On the other hand, the number remained practically stable in Quebec and Alberta and rose slightly in Newfoundland and Saskatchewan.

- It is in Quebec that the first marriage rate has fallen the most since the mid-1970s. Quebec is also the province in which common-law unions are the most popular; approximately 25% of Quebec couples opt for this conjugal way of life.

xxx

- The number of divorces fell again in 1997, reaching its lowest level since 1985; this trend affected all provinces.

- Divorce is higher in the West. Year after year, the Atlantic provinces, especially Newfoundland, post the lowest rates. On the other hand, Alberta and British Columbia have the highest rates.

- Having fallen since 1969, the average length of marriage at the time of divorce has been rising since 1995. This situation could be due to the popularity of common-law unions as well as the increase in the average age at marriage.

xxx

- There were 348,598 births in Canada in 1997, down 4.8% from the previous year.
- The downward trend was observed throughout Canada but was greater for the provinces of Eastern and Central Canada. In 1997, Quebec registered the greatest percentage change in the number of births: -6.4%.
- This decline in births is partly due to a structural effect of the make-up of Canada's population: women currently in their childbearing years belong to the small cohorts of the baby bust.
- Canada's total fertility rate was 1.55 children per woman in 1997, the lowest level ever recorded in Canada.
- The fertility of women between 15 and 30 years of age has been dropping in Canada for the past two decades. For some time, this decrease was partially offset by an increase in the fertility of women between 30 and 49 years of age. This is no longer the case today; the recent decline in fertility now affects all age groups.
- Newfoundland had the lowest total fertility rate in Canada: 1.27 children per woman. In 1997, Saskatchewan and Manitoba were the most fertile provinces, with respectively 1.83 and 1.82 children per woman.

xxx

- There were 215,699 deaths in Canada in 1997. While the number was up (there were 2,810 more deaths than in the previous year), this does not indicate an increase in mortality. It is merely that the population is aging.
- The life expectancy of Canadian females in 1997 was 81.4 years, a gain of 0.18 years over the previous year. Males can expect to live an average of 75.8 years, a gain of 0.33 years over 1996.
- Gains in live expectancy during the period 1991-1996 were greater for males than for females, but the gap (5.6 years in 1997) was still in favour of females.
- With an infant mortality rate of 5.5 per 1,000, Canada ranks among the top ten countries worldwide in this regard.
- Standardized mortality rates for diseases of the circulatory system and cerebrovascular diseases continue to fall.
- Standardized mortality rates for tumours or cancers in males are at their lowest level since 1976. For females, the increase in tumours and cancers, especially malignant tumours of the respiratory tract, has been much greater than for males in the past twenty years, but it seems to be slowing.

- The number of deaths attributable to HIV fell by 54% for males and 32% for females between 1996 and 1997, partly because affected individuals are surviving longer.

xxx

- Canada received 174,143 immigrants in 1998, a decrease of nearly 42,000 from the previous year. This is the largest drop in immigration in 40 years.
- The number of immigrants from Asian countries fell sharply in 1998 (-27%), especially from Hong Kong (-64%), Taiwan (-46%) and Pakistan (-31%). Even so, Asia is still the main source of immigrants admitted to Canada.
- In 1998, British Columbia and Ontario, the main beneficiaries of Asian immigration, suffered the steepest declines in the number of immigrants received (respectively -25% and -21%). However, Ontario was still the province most preferred by immigrants. Quebec and Alberta were relatively untouched by this decrease.
- The greatest drop was in the "economic migrant" category (-24%). The "family" and refugee" categories also registered losses, although they were smaller (-15% and -6% respectively).
- International adoption has been increasing in Canada for the past ten years, especially in Ontario, Quebec and British Columbia. The adoption of Chinese girls is especially popular in Quebec.

xxx

- The Atlantic provinces, especially Newfoundland, as well as Quebec and the Prairie provinces except for Alberta, continued to have a negative interprovincial migration balance in 1997. At the same time, Ontario had a positive balance in its exchanges with the other provinces, for the first time since 1988. In the West, British Columbia seemed much less attractive in 1997, to the advantage of Alberta.
- Ontario seems to be the hub of Canada's migration system, since it is the origin or destination of half of interprovincial migrants.

PART II

- In Canada, the theoretical link thought to exist between the size of a cohort and its average fertility seems to hold only for the period of the baby boom and baby bust (1946-1980). Both before and after that period, there is no evidence of such a link in Canada.

- There is an excellent fit between the change in fertility and the change in the average annual wage in Canada, suggesting that the two are closely linked.

- There is also a very good fit between fertility and the relative income of young males aged 20 to 34, which tends to confirm the economic theory of relative income for Canada.

- The relative income of young males and the weekly wage of young females follow a similar downward trend during the period 1976-1996 in Canada when education and work experience levels are held constant.

- Fertility at ages 20-29 in Canada is linked to young couples' economic situation. The curve representing the change in the fertility rate for the 20-29 age group can be reproduced almost perfectly using an econometric model that includes young males' relative income and young females' weekly wage. The use of this model for projection purposes suggests that an increase in young males' relative income would lead to a recovery of fertility in Canada.

xxx

- Canadian females and males are not only living longer, but they are living longer in good health.

- At the start of the century, scarcely 38% of Canadian males and 44% of Canadian females lived to age 65; in 1996, the corresponding proportions were respectively 81% and 89%.

- Before age 65, 90% of the Canadian population lives independently with respect to daily domestic activities. If there is dependence, it is usually moderate. Beyond that age, the average health status of the population deteriorates rapidly, and severe dependence increases, especially after age 70, as does institutionalization after age 75.

- In 1996, dependence-free life expectancy at age 15 was 58.9 years for females and 57.0 for males. This represents respectively 88% and 93% of their total life expectancy at that age.

- The burden of years lived with dependence after age 65 has diminished considerably. For men, the gains in life expectancy at that age amounted to 1.1 years between 1986 and 1996; two-thirds of those gains were in years lived dependence-free. For women, the gains in life expectancy over the same period were 0.6 years; their dependence-free life expectancy grew more (1.1 years).

- Health-adjusted life expectancy also increased during the period 1986-1996, for both sexes. Males can expect to live the equivalent of 91% of their total life expectancy in perfect health, while the corresponding figure for females is 89%.

- The findings presented in this ***Report on the Demographic Situation in Canada*** concerning dependence-free life expectancy contradict those recently published by the OECD for the period 1978-1991. Contrary to what the OECD states, dependence-free life expectancy is increasing in Canada.

xxx

- Between 1986 and 1996, the Census count of the population with aboriginal origin went from 711,000 to 1,102,000 persons. A large part of this growth occurred between 1986 and 1991. The average annual growth rate reached 7% during this period.

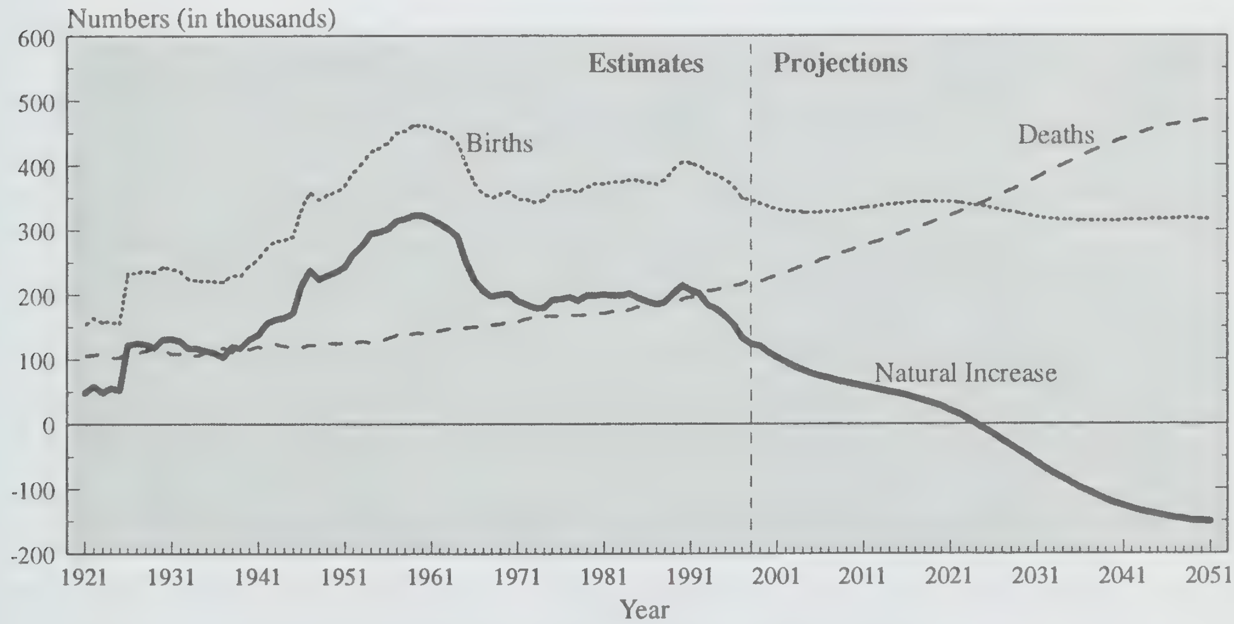
- This fast growth cannot be explained by natural and migratory increases alone. A component analysis shows mainly that the change is in the declarations of aboriginal origin, a phenomenon called *ethnic mobility.*

Part I

DEMOGRAPHIC ACCOUNTS

As of January 1, 1998, the population of Canada was estimated at 30,155,300 persons.[1] ***The total increase during 1997 was 320,800 persons, which represents a growth rate of 10.7 per 1,000***. While relatively high when compared to the rate observed in other industrialized countries, ***this growth is the lowest that Canada has experienced since 1985***. It results from the accelerated decline of natural increase and a slight reduction in immigration. In 1997, the balance of births over deaths sagged by 13.2%, dropping from 153,300 persons in 1996 to 133,000 persons only in 1997. According to preliminary estimates, this balance will fall to 122,900 in 1998, thus continuing its decline, which results from the contemporary low fertility and the aging of the population. Without an appreciable rise in fertility, the arrival of the reduced baby-bust cohorts to childbearing ages, replacing the large baby boom cohorts, can only mean a drop in births. The arrival of the large cohorts of the baby boom at ages where the risks of death start to rise will increase the gross mortality rate and the number of deaths (Figure 1). As a result, Canada will not sustain its population growth without substantial levels of immigration to offset the slowing of natural increase.

Figure 1. Births, Deaths and Natural Increase, Canada, 1921-2051



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Projections Section, special scenario.

---

[1] The numbers included in the 1998 accounting, unless otherwise specified, are those which were available on March 22, 1999. They may differ from those contained in other tables on population components where more recent statistics are available.

Table 1. Population as of January 1st and Population Growth Components, Canada, 1972-1999

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non Permanent Residents (net)	Residual[1]
		Total	Natural	Migratory							
1972	22,093.1	256.0	184.9	98.8	347.3	162.4	122.0	63.2	37.1	3.0	-27.7
1973	22,349.2	303.0	179.3	151.4	343.4	164.0	184.2	78.5	37.8	7.9	-27.7
1974	22,652.2	325.6	178.9	174.5	345.6	166.8	218.5	78.0	36.0	-2.0	-27.7
1975	22,977.8	326.0	192.1	161.5	359.3	167.2	187.9	70.7	36.4	7.9	-27.7
1976	23,303.8	288.0	193.0	118.2	360.0	167.0	149.4	64.4	36.1	-3.0	-23.1
1977	23,591.8	258.7	194.7	83.8	362.2	167.5	114.9	61.4	32.3	-2.0	-19.8
1978	23,850.5	222.0	190.2	51.7	358.4	168.2	86.3	63.5	31.8	-3.0	-19.8
1979	24,072.6	273.6	197.9	95.5	366.1	168.2	112.1	54.7	30.3	7.9	-19.8
1980	24,346.2	319.8	199.2	140.4	370.7	171.5	143.1	45.2	27.6	14.9	-19.8
1981	24,665.9	313.9	200.3	134.3	371.3	171.0	128.6	50.1	25.4	30.3	-20.8
1982	24,979.8	263.6	198.7	86.4	373.1	174.4	121.1	59.4	28.3	-3.7	-21.4
1983	25,243.4	239.5	199.2	61.7	373.7	174.5	89.2	58.6	26.8	4.4	-21.4
1984	25,482.9	238.7	201.3	58.8	377.0	175.7	88.2	55.2	26.2	-0.3	-21.4
1985	25,721.6	241.4	194.4	68.4	375.7	181.3	84.3	54.2	27.3	11.0	-21.4
1986	25,963.1	297.1	188.7	122.1	372.9	184.2	99.2	49.1	25.4	46.5	-13.7
1987	26,260.1	349.5	184.8	172.9	369.7	185.0	152.1	44.3	24.2	40.9	-8.2
1988	26,609.7	432.2	186.8	253.6	376.8	190.0	161.9	38.7	21.5	108.9	-8.2
1989	27,041.9	433.3	201.7	239.7	392.7	191.0	192.0	40.7	21.1	67.4	-8.2
1990	27,475.2	388.4	213.5	183.1	405.5	192.0	214.2	39.6	19.4	-11.0	-8.2
1991	27,863.6	319.7	207.0	137.3	402.5	195.6	230.8	48.0	22.7	-68.3	-24.6
1992	28,183.3	365.1	202.1	199.2	398.6	196.5	252.8	44.6	22.9	-31.9	-36.3
1993	28,548.3	317.5	183.5	170.3	388.4	204.9	255.7	44.6	22.4	-63.3	-36.3
1994	28,865.8	325.3	178.0	183.6	385.1	207.1	223.8	46.2	22.5	-16.5	-36.3
1995	29,191.1	318.3	167.3	187.3	378.0	210.7	212.0	47.5	22.7	0.2	-36.3
1996	29,509.4	325.1	153.3	186.9	366.2	212.9	226.1	48.2	22.9	-13.8	-15.1
1997 PR	29,834.6	320.8	133.0	187.7	348.6	215.5	216.1	50.0	23.0	-1.4	...
1998 PR	30,155.3	262.8	122.9	140.0	345.7	222.8	174.0	50.5	23.7	-7.3	...
1999 PP	30,418.1	..	..	..	..	..	..	..	..	..	...

RATES (for 1,000)

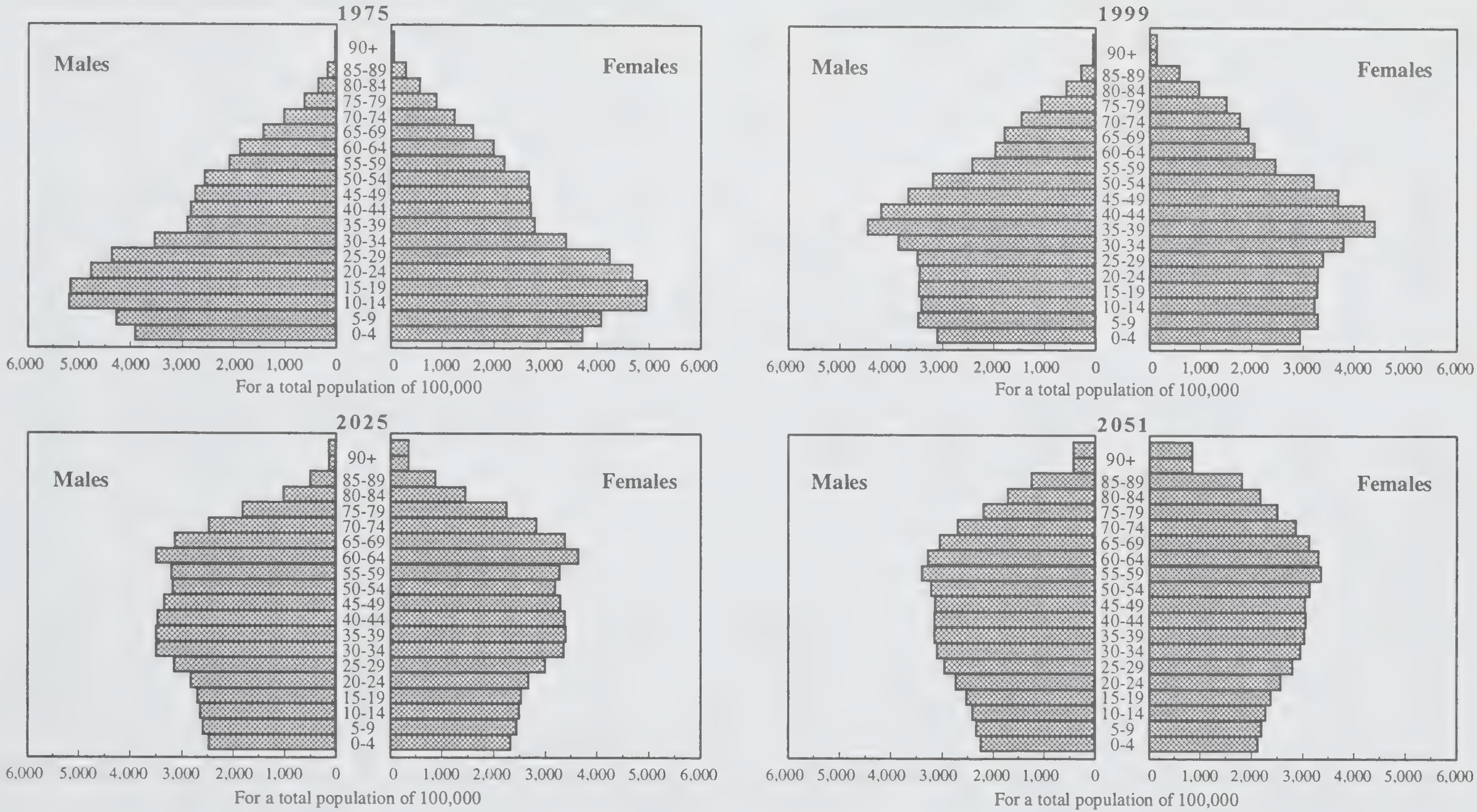
Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents
		Total	Natural	Migratory						
1972	22,093.1	11.52	8.32	4.45	15.63	7.31	5.49	2.85	1.67	0.13
1973	22,349.2	13.47	7.97	6.73	15.26	7.29	8.19	3.49	1.68	0.35
1974	22,652.2	14.27	7.84	7.65	15.15	7.31	9.58	3.42	1.58	-0.09
1975	22,977.8	14.09	8.30	6.98	15.53	7.22	8.12	3.06	1.57	0.34
1976	23,303.8	12.28	8.23	5.04	15.35	7.12	6.37	2.74	1.54	-0.13
1977	23,591.8	10.91	8.21	3.53	15.27	7.06	4.84	2.59	1.36	-0.08
1978	23,850.5	9.27	7.94	2.16	14.96	7.02	3.60	2.65	1.33	-0.12
1979	24,072.6	11.30	8.17	3.95	15.12	6.95	4.63	2.26	1.25	0.33
1980	24,346.2	13.05	8.13	5.73	15.13	7.00	5.84	1.85	1.13	0.61
1981	24,665.9	12.64	8.07	5.41	14.96	6.89	5.18	2.02	1.03	1.22
1982	24,979.8	10.50	7.91	3.44	14.86	6.95	4.82	2.37	1.13	-0.15
1983	25,243.4	9.44	7.85	2.43	14.73	6.88	3.52	2.31	1.06	0.17
1984	25,482.9	9.32	7.86	2.30	14.73	6.86	3.45	2.16	1.02	-0.01
1985	25,721.6	9.34	7.52	2.65	14.54	7.02	3.26	2.10	1.06	0.42
1986	25,963.1	11.38	7.23	4.68	14.28	7.06	3.80	1.88	0.97	1.78
1987	26,260.1	13.22	6.99	6.54	13.99	7.00	5.75	1.68	0.92	1.55
1988	26,609.7	16.11	6.96	9.45	14.05	7.08	6.04	1.44	0.80	4.06
1989	27,041.9	15.89	7.40	8.79	14.41	7.01	7.04	1.49	0.77	2.47
1990	27,475.2	14.04	7.72	6.62	14.65	6.94	7.74	1.43	0.70	-0.40
1991	27,863.6	11.41	7.39	4.90	14.36	6.98	8.24	1.71	0.81	-2.44
1992	28,183.3	12.87	7.13	7.02	14.05	6.93	8.91	1.57	0.81	-1.13
1993	28,548.3	11.06	6.39	5.93	13.53	7.14	8.91	1.55	0.78	-2.20
1994	28,865.8	11.21	6.13	6.32	13.27	7.13	7.71	1.59	0.77	-0.57
1995	29,191.1	10.85	5.70	6.38	12.88	7.18	7.22	1.62	0.77	0.01
1996	29,509.4	10.96	5.17	6.30	12.34	7.17	7.62	1.63	0.77	-0.47
1997 PR	29,834.6	10.69	4.44	6.26	11.62	7.18	7.20	1.67	0.77	-0.05
1998 PR	30,155.3	8.68	4.06	4.62	11.41	7.36	5.75	1.67	0.78	-0.24
1999 PP	30,418.1	..	..	..	..	..	..	..	..	..

[1] The residual consists of the distribution over five years of the error of closure at the end of the intercensal period.

(PR) Revised postcensal estimates; (PP) Preliminary postcensal estimates, based on 1996, as of March 22 1999.

Sources: Statistics Canada, Demography Division, Population Estimates Section and Research and Analysis Section.

Figure 2. Canadian Population Age Pyramids, 1975, 1999, 2025 and 2051



Sources: Statistics Canada, Demography Division, Population Estimates Section and Population Projections Section, special scenario.

While Canada's population growth remains at a relatively high level compared to its main political and economic partners, this is due mainly to strong international immigration. In 1997, Canada received 216,100 immigrants, representing a rate of 7.2 per 1,000[2]. In the United States, a similar calculation yields a rate of 2.9 per 1,000. Since 1990, the surplus of births over deaths has fallen from 213,500 to 122,900, a decrease of 42%! During the same period, the flow of international immigrants remained above 200,000 persons per year. Thus, during the past 10 years (1989-1998), Canada's population increased by 1,815,100 persons as a result of its migration exchanges with other countries and by 1,762,300 persons as a result of the surplus of births over deaths. This pattern is already incorporated into the aging structure and appears difficult to reverse (Figure 2).

Provincial Demographic Accounting

In 1997, population growth declined for all provinces except Ontario and especially Alberta, the big winner in the interprovincial migration exchanges that took place during the year (Table A1, appendix). For the first time since 1982, Alberta ranked first in growth. It stood out in 1997 with a growth rate of 22.8 per 1,000, more than double the rate for Canada as a whole. Its growth rate exceeded that of its neighbour to the west, British Columbia, which since 1988 had registered the highest growth rates in Canada. This strong growth is mainly due to the entry of a large number of Canadians from other provinces. It is estimated that 79,200 interprovincial migrants settled in Alberta in 1997, an increase of nearly 30% over the previous year. Preliminary data indicate that ***the favourable demographic situation that Alberta experienced in 1997 continued during 1998***. If the preliminary data are confirmed, the interprovincial migration balance will reach 45,700 persons in 1998 (97,900 in-migrants and 52,200 out-migrants). This level is extremely high, but it has been previously attained; in 1980, at the height of the oil boom, when Alberta registered a positive balance of 46,900 persons.

Ontario is the only other province to have a rate of population growth above the Canadian average in 1997 and 1998. As in the past, it continues to attract a high share of new immigrants (international balance of +96,200 and +71,200 persons respectively in 1997 and 1998). Ontario also saw its interprovincial migration balance become positive in 1997 (+5,100 persons), after experiencing a negative net internal migration in the previous eight years. The preliminary data for 1998 indicate that the balance will improve further and in fact double (+10,200 persons). On the other hand, the reduction in 1998 in the number of international immigrants received by Canada affects this province more than any other. This results in a slowing of its rate of population growth, from 14.3 per 1,000 in 1997 to 11.9 per 1,000 in 1998.

---

[2] In 1998, immigration has considerably declined in Canada (174,000 immigrants). This number is well below what was anticipated in the annual immigration plan.

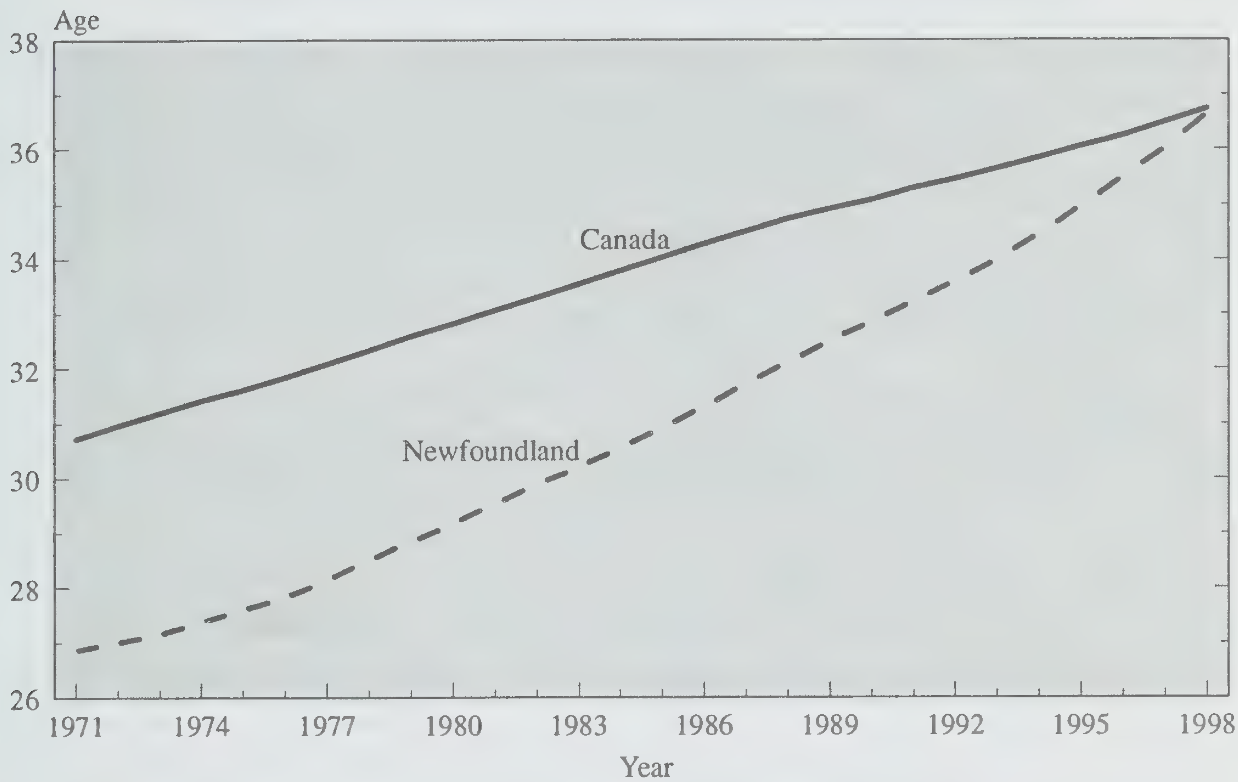
British Columbia will conversely see its situation further deteriorate, in both internal and international exchanges. Its population growth will reach 7.0 per 1,000 in 1998, thus trailing behind the growth of Canada. The situation is worth noting, since this is only the fourth time since 1921 that British Columbia's growth rate has been lower than that of the Canadian population as a whole. Long favoured in its migration exchanges, British Columbia has since 1993 seen its exit numbers increase while its entry numbers have declined. This has meant an accelerated reduction in its interprovincial migration balance, which fell from 37,600 persons in 1993 to only 5,600 persons in 1997. Preliminary data for 1998 indicate a negative balance (-18,800 persons), the first since 1985. Added to these unfavourable internal migration exchanges is a decrease in the attractiveness of this province for the smaller number of immigrants received by Canada, causing the province's total population growth to plummet from 108,700 persons in 1994 to 27,900 persons in 1998.

The other Prairie provinces — Manitoba and Saskatchewan — have also experienced a declining growth rate. While there were few changes in terms of natural increase, the interprovincial exit rates of these two provinces increased considerably in 1997 and 1998. Reflecting geographic proximity, the pull exerted by Alberta's economic growth is strongest on residents of nearby provinces.

The situation in also continuing to deteriorate in Newfoundland, but there the picture is much more extreme. Negative growth for that province notched upward again and reached 14.5 per 1,000 in 1997 and 14.8 per 1,000 in 1998, if preliminary estimates are confirmed. Newfoundland's population has been dropping by more than 1% each year since 1995 (-1.5% in 1998). Its total fertility rate has been less than 1.5 children per woman since 1991, and each year establishes a new floor (1.27 in 1997). The interprovincial exit rate, by far the highest in Canada, reached 35.1 per 1,000 in 1998. More than elsewhere in Canada, the gross mortality rate is trending upward because of the accelerated aging of the population (Figure 3), induced by a very low fertility rate and the very strong propensity of younger people to leave the province. Of all provinces, Newfoundland has the lowest life expectancy. At 74.5 years for males and 80.0 for females, the average life expectancy of Newfoundland males and females is nearly a year and a half lower than that of Canadian males and females generally (75.8 and 81.4 years respectively). While the life expectancy of males is improving, this is occurring much less rapidly than in the rest of Canada. The life expectancy of females remains unchanged.

The demographic situation of the other Atlantic provinces is much more stable. More than all other provinces in Canada, these provinces are approaching zero growth. Admittedly, all three posted migration balances that were negative in 1997 and 1998, but these balances were small, and they were generally offset by rates of natural increase that were still slightly positive. But as elsewhere

Figure 3. Average Age of the Population of Newfoundland and Canada, 1971-1998



Source: Statistics Canada, Demography Division, Population Estimates Section.

in Canada, natural increase is bound to decrease because of population aging and barring an unlikely reversal of migration flows, the population of these provinces may soon begin to decline. Already in 1998, the population of New Brunswick showed a slightly negative growth rate (-1.3 per 1,000).

Quebec is also approaching zero growth. While it attracts far fewer international immigrants than neighbouring Ontario, ***Quebec has benefited from a positive international migration balance of approximately 20,000 per year over the past five-year period***. This gain more than offsets its losses in interprovincial migration (-17,800 persons in 1997). Without international immigration, Quebec's population growth would be comparable to that of its Maritime neighbours.

Nunavut

Under an agreement between the federal government and representatives of the Inuit people of the Northwest Territories, a new territory — Nunavut — came into being on April 1, 1999. It results from splitting the former Northwest Territories in two. The central and eastern parts are Nunavut, while the western part retains the former name. It's a huge (more than 2 million square miles), sparsely populated territory (1 person per 100 square miles).

Table 2. Population Distribution of the Old Northwest Territories, the New Northwest Territories and Nunavut, July 1st, 1991 and 1998

	Old Northwest Territories	Nunavut		*New* Northwest Territories	
		Number	Percentage	Number	Percentage
1991	60,930	22,241	36.5	38,689	63.5
1998	67,468	26,453	39.2	41,015	60.8
Average Annual Growth Rate (per 1,000)	14.67	25.09		8.38	
Median Age in 1998	26.8	21.8		29.1	
Average Age in 1998	27.8	24.6		29.4	

Source: Statistics Canada, ***Annual Demographic Statistics 1998***, Catalogue no. 91-213-XPB.

As of July 1, 1998, the population of the two parts was estimated at 67,500 persons. Approximately 40% of this population, 26,500 persons, were living within the boundaries of what is now Nunavut, compared to some 41,000 persons residing in the western part (Table 2). Nunavut's population is growing faster than that of the Northwest Territories. Between July 1, 1991 and July 1, 1998, Nunavut's population grew by an annual rate of 2.5% on average, compared to 0.8% for the population within the new boundaries of the Northwest Territories.

The two populations are quite different, not only in ethnicity, but also in their demographic structure. Nunavut's population, made up primarily of Inuit (84%), has a younger age structure than the population of the Northwest Territories. The average age of Nunavut's population is 24.6 years, nearly 5 years younger than that of the Northwest Territories' population (29.4 years). Even so, both populations are much younger than the Canadian population as a whole, whose average age is 36.7. The gap between the median ages of the two populations is even larger. The median age of a population is the age that divides that population in two so that half is younger than that age and the other half is older. The median age of Nunavut's population is 21.8, meaning that half the population of the territory is under 22 years of age! The median age in the Northwest Territories is 29.1, and in Canada as a whole it is 36.0.

Intercensal Estimates from 1991 to 1996 and the Residual Difference

Each year, Statistics Canada's Demography Division produces population estimates. These result from a demographic accounting exercise based on the counts from the last available census, corrected for net undercoverage, to which births and international immigrants are added and from which deaths

and emigrants are substracted.[3] These can be classified as — preliminary, revised or final postcensal estimates, depending on the quality of the sources used to estimate the components of demographic change. Subsequently, a new census makes it possible to assess their accuracy through comparison to new census counts. With each new census, the population base on which these estimates are calculated changes, and to ensure continuity of the time series, new estimates are produced, incorporating the differences observed between the new census figures corrected for net undercoverage and the postcensal estimates as of Census Day. These are the intercensal estimates.

The difference between the postcensal estimates and the numbers enumerated on May 14, 1996 represents what is called closure error. Distributed by year over the period between this census and the previous one, closure error corresponds to the residual difference for the period 1991-1996, shown in the right-hand column of Table 1. This table, reproduced and updated with each edition of the ***Report on the Demographic Situation***, includes for the first time intercensal estimates and the residual for the period 1991-1996. Admittedly, the residual difference of -36,300 persons per year for the period 1991-1996 is the largest since 1971, and it seems especially large when compared to the small residual for the previous period. Its size deserves an explanation.

Sources of Closure Error

The three largest components of population growth — births, deaths and international immigrants — are considered reliable. Therefore, most of closure error results, firstly, from differences in the quality of the census counts corrected for undercoverage, and secondly, from errors in the estimates of the other components (emigrants, returning Canadians and non-permanent residents). These estimates are less satisfactory, being derived indirectly (from administrative files). It is impossible to estimate precisely how much of the error should be attributed to each of these components, but the evidence seems to point to the estimation of international emigration.

It seems certain that international emigration was underestimated during the period 1991-1996. This may be seen by comparing the estimate of this component, produced annually by Demography Division using administrative data, with the estimates obtained from the Reverse Record Check (RRC) conducted after the Census. This survey, which measures net undercoverage by tracing persons who should have been enumerated in the census, estimated significantly more permanent emigrants than the current demographic estimate. It also showed a major increase in the number of Canadians temporarily abroad, whereas an implicit assumption of the current estimate was that the number

---

[3] This is a simplification, since over the years, new components have been added to this accounting exercise: returning Canadians, non-permanent residents, and soon, non-permanent emigrants.

of such persons remained fairly constant from one census to another. Furthermore, in comparison with the census data and new administrative data, the estimate of the number of returning Canadians appears to have been too high. Thus, with an underestimation of emigrants and an overestimation of returning Canadians, much of the closure error in 1996 results from a sizable overestimate of net international migration, amounting to approximately 170,000 persons.

The residuals as documented in Table 1 are actually smaller than first documented at the time of the initial release of 1996 Census based figures. As a result of a thorough review of procedures used in the evaluation and estimation of Census coverage error, net undercoverage rates have recently been revised downward from 1971 onward. This has led Demography Division to develop new population estimates for this period.[4] For example, a net undercoverage rate initially estimated at 2.82% in the 1991 Census has recently been revised downward to 2.52%. This correspondingly had the effect of reducing closure error as initially documented in 1996 at 289,000, to its current level of 181,000. These revisions have greatly improved census comparability, but the quality of corrections for each census still differ somewhat. Furthermore, the estimates of net undercoverage still contain sampling errors that can influence the size of closure error. Thus, in the 1996 Census, while the estimate of the net number of persons missed is 723,000,[5] the actual number may vary by plus or minus 60,000 persons.

Provincial Variations in the Residual Difference

In addition to these two main sources of error responsible for the residual at the national level, there is, at the provincial level, some errors associated with the estimation of interprovincial migration and the distribution of net international migration. Furthermore, the size of the sampling error is greater owing to smaller sample sizes in the Reverse Record Check survey. Nevertheless, several conclusions emerge from the coverage studies concerning the last census. The estimate of net migration was likely too low for Ontario (by at least 39,000 persons) and Quebec, and too high for British Columbia and Alberta. It is also possible that the interprovincial migration balance was underestimated for British Columbia (-23,400 persons) and overestimated for Alberta (+17,500 persons) and Newfoundland (+9,700 persons). Once these phenomena are taken into account, the closure error is smaller; however, for New Brunswick, Quebec and British Columbia, possible biases and random variation in the estimation of net undercoverage appear to have predominated.

---

[4] All demographic indicators presented in this edition of the ***Report on the Demographic Situation*** were recalculated on the basis of the new population estimates for the period 1971-1996.

[5] The figure is 773,000 persons when Indian reserves are included.

Hence, not all the provinces are equally affected by closure error. Whereas closure error is generally negative, provinces sometimes see their population corrected upward. For example, the estimate as of July 1, 1996, based on the results of the last census, adds nearly 40,000 persons to the population of British Columbia in comparison to the postcensal estimate based on the previous census (Table A1, appendix). For its part, Saskatchewan gains approximately 5,000 persons. All the other provinces see their population numbers decrease through the establishment of a new base for their population estimates. Ontario and Quebec, the two most populous provinces, lose respectively 110,000 and 95,000 persons.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1998							
	Year	New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Birth Rate (per 1,000)	1981	17.7	15.4	14.1	14.9	14.6	13.9
	1986	14.1	15.0	13.9	13.5	12.6	14.2
	1991	12.4	14.4	13.1	12.7	13.8	14.5
	1994	11.0	12.8	12.0	12.0	12.6	13.6
	1995	10.3	13.0	11.6	11.4	12.1	13.3
	1996	10.2	12.5	11.3	10.9	11.7	12.6
	1997	9.8	11.6	10.7	10.5	10.9	11.8
	1998 (P)	9.4	11.4	10.5	10.3	10.3	11.8
Mortality Rate (per 1,000)	1981	5.6	8.0	8.1	7.3	6.5	7.1
	1986	6.1	8.7	8.2	7.5	7.0	7.2
	1991	6.6	9.1	7.9	7.3	7.0	7.0
	1994	7.1	8.3	8.4	7.9	7.1	7.2
	1995	6.9	8.5	8.3	7.9	7.3	7.2
	1996	7.0	9.3	8.3	7.8	7.2	7.1
	1997	7.8	7.5	8.6	7.9	7.4	7.1
	1998 (P)	8.0	8.5	8.8	8.2	7.3	7.3
Total Fertlity Rate (number of children per women aged 15-49)	1981	..	1.88	1.62	1.68	1.57	1.58
	1986	..	1.79	1.59	1.53	1.38	1.60
	1991	1.44	1.86	1.59	1.55	1.65	1.67
	1993	1.32	1.76	1.57	1.53	1.64	1.67
	1994	1.34	1.73	1.54	1.55	1.64	1.67
	1995	1.28	1.79	1.52	1.51	1.61	1.67
	1996	1.30	1.73	1.52	1.46	1.60	1.61
	1997	1.27	1.63	1.45	1.44	1.52	1.53
Total First Marriage Rate (per 1,000) (males aged 17-49, females aged 15-49)	1981 M	653	701	686	660	546	692
	F	631	668	672	649	560	685
	1986 M	589	711	595	600	430	623
	F	580	742	631	626	442	658
	1991 M	600	727	575	581	381	610
	F	613	730	606	608	427	653
	1993 M	546	721	547	538	330	568
	F	560	733	574	570	370	609
	1994 M	592	673	559	551	339	572
	F	611	711	582	574	380	609
	1995 M	629	695	566	559	331	584
	F	649	734	592	594	370	618
	1996 M	607	747	586	581	327	579
	F	624	782	597	618	363	609
	1997 M	630	685	556	550	329	567
	F	653	718	583	587	362	597
Rate of Natural Increase (per 1,000)	1981	12.0	7.3	6.0	7.6	8.0	6.7
	1986	7.9	6.3	5.7	6.0	5.6	7.0
	1991	5.8	5.3	5.2	5.4	6.8	7.5
	1994	4.0	4.5	3.6	4.1	5.4	6.4
	1995	3.4	4.5	3.3	3.5	4.8	6.2
	1996	3.2	3.1	3.0	3.0	4.5	5.5
	1997	2.0	4.1	2.0	2.6	3.5	4.8
	1998 (P)	1.5	3.0	1.7	2.1	3.0	4.4
Total Growth Rate (per 1,000)	1981	-1.1	1.7	3.9	0.1	6.5	10.7
	1986	-2.8	1.1	4.8	1.7	9.1	18.3
	1991	2.1	0.9	5.5	4.8	7.1	12.2
	1994	-11.1	10.6	1.7	1.8	4.8	12.8
	1995	-11.8	8.5	2.8	0.9	4.7	12.7
	1996	-12.2	7.3	4.0	1.3	4.8	13.0
	1997 (PR)	-14.5	0.7	1.5	0.7	4.0	14.3
	1998 (PR)	-14.7	1.8	0.8	-1.3	3.7	11.9

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1998 - Continued

	Year	Manitoba	Saskatch-ewan	Alberta	British Columbia	Yukon	Northwest Territories[4]	Canada
Birth Rate (per 1,000)	1981	15.5	17.6	18.6	14.7	21.9	27.5	15.0
	1986	15.6	17.0	18.1	14.0	19.5	27.6	14.3
	1991	15.6	15.3	16.5	13.5	19.8	26.9	14.4
	1994	14.7	13.9	14.7	12.8	14.7	24.2	13.3
	1995	14.3	13.3	14.2	12.4	15.2	24.3	12.9
	1996	13.7	13.1	13.6	11.9	13.9	23.2	12.3
	1997	12.9	12.6	13.0	11.3	14.8	21.8	11.6
	1998 (P)	13.0	12.5	13.0	11.1	14.1	21.2	11.4
Mortality Rate (per 1,000)	1981	8.3	7.7	5.6	7.0	5.8	4.1	6.9
	1986	8.2	7.8	5.6	7.1	4.6	4.3	7.1
	1991	8.1	8.1	5.6	7.1	4.0	3.9	7.0
	1994	8.1	8.2	5.8	7.0	4.1	3.7	7.1
	1995	8.6	8.4	5.8	7.0	5.1	3.4	7.2
	1996	8.4	8.6	5.9	7.1	3.8	4.0	7.2
	1997	8.4	8.4	5.8	6.9	3.9	3.8	7.2
	1998 (P)	8.6	8.8	6.0	7.3	4.0	4.1	7.4
Total Fertlity Rate (number of children per women aged 15-49)	1981	1.83	2.12	1.87	1.64	2.07	2.86	1.65
	1986	1.83	2.03	1.86	1.62	1.95	2.85	1.60
	1991	1.97	2.04	1.90	1.69	2.15	2.88	1.71
	1993	1.97	1.98	1.82	1.64	1.89	2.69	1.69
	1994	1.97	1.97	1.82	1.64	1.73	2.73	1.69
	1995	1.95	1.91	1.79	1.61	1.82	2.77	1.67
	1996	1.90	1.89	1.74	1.55	1.67	2.70	1.62
	1997	1.82	1.83	1.68	1.48	1.82	2.57	1.55
Total First Marriage Rate (per 1,000) (males aged 17-49, females aged 15-49)	1981 M	722	710	644	684	693	457	645
	F	712	698	689	695	715	474	651
	1986 M	615	588	566	582	484	351	558
	F	660	628	616	623	573	399	589
	1991 M	600	622	597	601	470	284	548
	F	651	656	643	661	521	311	594
	1993 M	592	616	592	577	401	276	513
	F	638	648	634	627	464	309	555
	1994 M	592	632	604	571	430	298	520
	F	637	663	652	629	464	333	562
	1995 M	607	641	611	556	541	282	524
	F	657	665	649	607	543	315	563
	1996 M	582	628	569	521	453	268	512
	F	626	653	613	563	486	282	548
	1997 M	573	633	565	502	409	260	505
	F	611	655	607	540	422	310	539
Rate of Natural Increase (per 1,000)	1981	7.2	9.9	13.0	7.7	16.1	23.3	8.1
	1986	7.4	9.2	12.5	6.9	14.9	23.3	7.2
	1991	7.5	7.2	10.9	6.4	15.8	23.0	7.4
	1994	6.5	5.7	8.9	5.7	10.5	20.5	6.1
	1995	5.7	4.9	8.4	5.4	10.1	20.9	5.7
	1996	5.3	4.5	7.7	4.8	10.2	19.2	5.2
	1997	4.5	4.1	7.2	4.3	10.9	18.0	4.4
	1998 (P)	4.4	3.6	7.0	3.9	10.2	17.2	4.1
Total Growth Rate (per 1,000)	1981	7.4	11.4	39.2	22.9	-22.7	37.0	12.6
	1986	6.3	2.6	6.0	11.5	31.5	-1.7	11.4
	1991	3.6	-1.2	15.9	25.3	41.4	31.7	11.4
	1994	5.1	4.2	12.4	29.5	9.9	23.8	11.2
	1995	4.4	4.3	14.0	25.6	38.6	14.7	10.8
	1996	4.0	4.4	16.8	23.3	20.3	7.8	11.0
	1997 (PR)	0.8	2.4	22.8	17.3	-1.5	0.7	10.7
	1998 (PR)	3.5	3.6	25.3	7.0	-35.6	2.5	8.7

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1998 - Continued

	Year		New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Population Aged 65 + as a Percentage of the Total Population on July 1	1981		7.7	12.1	10.9	10.0	8.8	9.9
	1986		8.7	12.6	11.8	11.0	9.8	10.7
	1991		9.6	13.1	12.5	12.0	11.1	11.6
	1994		10.1	13.0	12.8	12.3	11.6	12.0
	1995		10.4	13.0	12.8	12.4	11.8	12.1
	1996		10.7	12.9	12.9	12.5	12.0	12.2
	1997 (PR)		11.0	12.9	13.1	12.7	12.2	12.3
	1998 (PR)		11.4	13.0	13.2	12.9	12.4	12.4
Total Age Dependency Ratio (in %)[1]	1981		78.2	76.0	67.0	69.5	55.9	58.9
	1986		68.1	68.6	61.1	62.5	52.2	55.0
	1991		59.7	67.3	59.1	59.7	53.5	55.5
	1994		55.9	65.3	58.1	57.7	54.3	56.8
	1995		55.1	64.5	57.9	57.0	54.2	57.0
	1996		54.3	63.5	57.7	56.5	54.2	57.4
	1997 (PR)		53.4	62.5	57.3	56.0	54.0	57.4
	1998 (PR)		52.7	61.9	56.8	55.4	53.6	57.2
Life Expectancy at Birth (in years)	1986	M	72.8	72.8	72.4	72.7	72.2	73.8
		F	79.2	...[2]	79.5	80.1	79.7	80.0
	1991	M	73.7	73.2	73.7	74.2	73.8	75.0
		F	79.6	...[2]	80.3	80.9	80.9	80.9
	1993	M	73.9	74.3	74.0	74.4	74.1	75.2
		F	79.9	...[2]	80.4	80.7	81.0	81.0
	1994	M	73.9	...[2]	74.4	74.4	74.1	75.4
		F	79.9	...[2]	80.4	80.7	81.0	81.0
	1995	M	74.2	...[2]	74.5	74.6	74.5	75.6
		F	80.2	81.1	80.6	81.0	81.0	81.1
	1996	M	74.4	...[2]	74.8	74.8	74.6	75.9
		F	80.2	...[2]	80.6	81.2	81.0	81.3
	1997	M (P)	74.5	...[2]	75.0	75.2	74.9	76.2
		F (P)	80.0	...[2]	80.6	81.2	81.2	81.5
Infant Mortality Rate (per 1,000)	1981		9.7	13.2	11.5	10.9	8.5	8.8
	1986		8.0	6.7	8.4	8.3	7.1	7.2
	1991		7.8	6.9	5.7	6.1	5.9	6.3
	1993		7.8	9.1	7.1	7.2	5.7	6.2
	1994		8.2	6.4	6.0	5.3	5.6	6.0
	1995		7.9	4.6	4.8	4.8	5.5	5.9
	1996		6.6	4.7	5.6	4.9	4.6	5.7
	1997		5.2	4.4	4.4	5.7	5.6	5.5
Rate of Pregnancies Terminated (per 1,000 births)[3]	1981		3.5	0.3	14.1	4.1	9.5	25.0
	1986		3.4	...	14.1	3.3	14.7	20.2
	1991		6.0	...	15.1	6.2	15.1	20.7
	1993		7.2	...	16.8	7.0	18.3	20.7
	1994		7.3	...	16.6	6.6	19.2	20.3
	1995		8.6	...	17.1	7.1	20.8	19.9

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1998 - Concluded

	Year		Manitoba	Saskat-chewan	Alberta	British Columbia	Yukon	Northwest Territories[4]	Canada
Population Aged 65 + as a Percentage of the Total Population on July 1	1981		11.8	11.9	7.2	10.7	3.3	3.0	9.6
	1986		12.4	12.6	8.0	11.9	3.7	2.9	10.5
	1991		13.3	14.1	9.0	12.7	3.9	2.7	11.5
	1994		13.5	14.4	9.5	12.6	4.2	2.8	11.8
	1995		13.5	14.5	9.6	12.6	4.3	2.9	12.0
	1996		13.5	14.5	9.8	12.5	4.4	3.0	12.1
	1997 (PR)		13.6	14.5	9.8	12.6	4.6	3.1	12.2
	1998 (PR)		13.6	14.6	9.9	12.7	4.9	3.3	12.3
Total Age Dependency Ratio (in %)[1]	1981		67.7	73.3	57.4	58.6	53.4	77.9	59.8
	1986		64.0	70.7	56.2	57.4	50.3	69.0	56.3
	1991		65.5	73.8	58.1	57.7	47.5	65.9	56.8
	1994		65.5	73.7	58.3	56.9	47.8	66.5	57.2
	1995		65.5	73.2	58.0	56.4	47.8	66.4	57.2
	1996		65.2	72.5	57.7	55.9	47.2	66.3	57.1
	1997 (PR)		65.0	71.7	57.2	55.6	47.2	66.4	56.9
	1998 (PR)		64.7	70.8	56.5	55.2	46.8	66.4	56.6
Life Expectancy at Birth (in years)	1986	M	73.2	73.8	73.7	74.4	...	...	73.3
		F	79.9	80.5	80.2	80.7	...	...	80.0
	1991	M	74.6	75.2	75.1	75.3	...	...	74.6
		F	80.7	81.5	81.2	81.4	...	...	81.0
	1993	M	74.7	75.5	75.4	75.5	...	...	74.9
		F	80.9	81.8	81.1	81.4	...	...	81.0
	1994	M	74.7	75.1	75.5	75.7	...	...	75.0
		F	80.9	81.8	81.1	81.4	...	...	81.0
	1995	M	75.0	75.1	75.6	75.9	...	...	75.2
		F	80.6	81.5	81.3	81.7	...	...	81.1
	1996	M	75.1	75.4	75.9	76.2	...	...	75.5
		F	80.5	81.4	81.3	81.8	...	...	81.2
	1997	M (P)	75.5	75.7	76.3	76.5	...	...	75.8
		F (P)	80.6	81.4	81.5	82.1	...	...	81.4
Infant Mortality Rate (per 1,000)	1981		11.9	11.8	10.6	10.2	14.9	21.5	9.6
	1986		9.2	9.0	9.0	8.5	24.8	18.6	7.9
	1991		6.4	8.2	6.7	6.5	10.6	12.2	6.4
	1993		7.1	8.1	6.7	5.7	7.9	9.6	6.3
	1994		7.0	8.9	7.4	6.3	2.3	14.6	6.3
	1995		7.6	9.1	7.0	6.0	12.8	13.0	6.1
	1996		6.7	8.4	6.2	5.1	0.0	12.2	5.6
	1997		7.5	8.9	4.8	4.7	8.4	10.9	5.5
Rate of Pregnancies Terminated (per 1,000 births)[3]	1981		10.0	9.5	15.8	30.8	20.9	10.8	17.5
	1986		15.9	5.5	14.4	27.3	22.8	12.2	17.0
	1991		15.2	8.1	14.9	23.7	27.5	17.7	17.5
	1993		16.2	11.2	15.9	23.7	33.5	15.6	18.7
	1994		17.9	12.3	16.9	20.8	33.0	15.1	18.6
	1995		18.2	13.5	17.0	18.4	27.7	14.9	18.7

[1] Ratio between population aged 0-17, 65+ and 18-64.
[2] Because of an absence of deaths in certain age groups, the mortality table could not be calculated.
[3] Practised in hospitals in Canada.
[4] Nunavut included.
(P) Preliminary.
(PR) Updated postcensal estimates based on 1996, as of March 22 1999.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section, ***Births***, catalogue no. 84-210, ***Deaths***, catalogue no. 84-211, ***Marriages***, catalogue no. 84-212, ***Therapeutic Abortions***, catalogue no. 82-219 and Demography Division, Population Estimates Section.

CANADA IN THE WORLD

Global demographic trends have resulted in a world population approaching 6 billion, distributed unequally among 225 sovereign states and territories. Marked by a period of major transition[6] and by various geopolitical upheavals, the world population has undergone demographic changes that are both spasmodic and irregular over time and space. One of the most imperative challenges facing modern societies is to maintain a demographic balance, or rather to tend toward such a balance. This necessity, the various aspects of which will not be elaborated on here, is causing some countries to adopt population policies that are either expansionist (boosting the birth rate and opening the doors to immigrants) or restrictive (limiting births and immigration).

Policies to reduce population growth are being applied primarily in densely populated countries and those with an undesirable growth rate, such as is observed in some countries (Burundi, Mozambique, Ethiopia, etc.) where famine and poverty may be linked with population growth. By contrast, the most industrialized countries are experiencing low growth or even negative growth, and are striving to increase their population by a combination of pro-natalist and pro-immigration programs. To date, pro-natalist programs have not yielded the desired results. In particular, Canada and all other G7 countries[7] have a birth rate below replacement level (2.1 children per woman).

Among the main industrialized countries in Table 3, only Mexico has a total fertility rate greater than the replacement level, with 2.73 children per woman. The United States and Iceland follow at some distance with respectively 2.06 and 2.04 children per woman. ***Italy and Spain have the lowest total fertility rates, with respectively 1.22 and 1.15 children per woman***. However, this current low fertility should be interpreted with caution, since it might be partly due to a deferral of births by new cohorts reaching childbearing age. This phenomenon of an increase in the age at which women bear children is tending to become fairly widespread in the industrialized countries. In Canada, for example, mothers are on average older now than they were in previous generations. While trends can reverse unexpectedly, it is unlikely that Canadian fertility will rebound back up to replacement level. As a result, immigration is becoming the preferred solution of some industrialized countries coping with low birth rate.

---

6 The shift from a pattern of high fertility and high mortality to a pattern of relatively low fertility and low mortality has been a transition period without precedent in world demographic history. In some less developed countries, this transition is still not completed.

7 The G7 is made up of the seven most industrialized countries (Australia, Canada, France, Germany, Japan, the United Kingdom and the United States). At the 23rd G7 summit held in Denver in 1997, Russia joined the group.

Table 3. Population Change (in Thousands) and Demographic Indicators for the Main Industrialized Countries, 1997 or the most recent year available

Country	Population as of January 1, 1997	Births	Deaths	Natural Increase	Net Migration	Population as of January 1, 1998	Total Growth
Austria	8,067.8	84.0	79.4	4.6	2.6	8,075.0	7.2
Belgium	10,170.0	116.2	104.2	12.0	10.3	10,192.3	22.3
Denmark	5,275.1	67.6	59.9	7.7	12.1	5,294.9	19.8
Finland	5,131.2	59.3	49.1	10.2	5.9	5,147.3	16.1
France	58,490.0	725.5	531.2	194.3	40.7	58,725.0	235.0
Germany	82,012.0	812.2	860.4	-48.2	93.2	82,057.0	45.0
Greece	10,486.6	102.0	101.0	1.0	20.0	10,507.6	21.0
Ireland	3,652.2	52.3	31.6	20.7	20.0	3,692.9	40.7
Italy	57,461.0	528.9	553.1	-24.2	126.0	57,562.8	101.8
Luxemburg	418.3	5.5	3.9	1.6	3.8	423.7	5.4
Netherlands	15,567.2	191.0	136.0	55.0	27.9	15,650.1	82.9
Portugal	9,934.1	112.9	104.8	8.1	15.1	9,957.3	23.2
Spain	39,298.6	358.2	356.3	1.9	47.4	39,347.9	49.3
Sweden	8,844.5	90.4	93.3	-2.9	6.0	8,847.6	3.1
United Kingdom	58,901.8	726.8	632.5	94.3	87.7	59,083.8	182.0
Europe (15)	**306,740.8**	**3,222.0**	**2,984.8**	**237.2**	**428.4**	**307,406.4**	**665.6**
Iceland	269.9	4.2	1.8	2.4	0.1	272.4	2.5
Norway	4,392.7	59.7	44.6	15.1	9.8	4,417.6	24.9
Switzerland	7,081.3	80.6	62.8	17.8	-5.6	7,093.5	12.2
Albania	3,167.2	61.7	18.2	43.5	..	..	..
Bosnia-Hercegovina	4,570.3	62.9	29.8	33.1	..	..	..
Bulgaria	8,339.8	64.1	121.9	-57.8	1.2	8,283.2	-56.6
Croatia	4,597.0	51.8	51.6	0.2	..	..	..
Czech Republic	10,307.1	90.7	112.7	-22.0	14.0	10,299.1	-8.0
Hungary	10,174.4	100.5	139.5	-39.0	-0.4	10,135.0	-39.4
Poland	38,639.3	412.6	380.2	32.4	-11.7	38,660.0	20.7
Romania	22,581.9	226.9	279.3	-52.4	-3.4	22,526.1	-55.8
Slovakia	5,378.9	59.1	52.1	7.0	1.8	5,387.7	8.8
Slovenia	1,987.0	18.2	18.9	-0.7	-1.4	1,984.9	-2.1
Yugoslavia	..	131.8	111.3	20.5	..	10,614.7	..
Central Europe	...	**1,280.3**	**1,315.5**	**-35.2**	...	...	...
Belarus	..	89.5	136.9	-47.4	..	10,203.8	..
Estonia	1,462.1	12.6	18.6	-6.0	-2.3	1,453.8	-8.3
Latvia	2,479.9	18.8	33.5	-14.7	-6.8	2,458.4	-21.5
Lithuania	3,707.2	37.8	41.1	-3.3	0.1	3,704.0	-3.2
Moldavia	4,320.0	49.8	50.6	-0.8	..	..	..
Ukraine	51,339.0	442.6	754.1	-311.5	..	..	..
Eastern Europe	...	**651.1**	**1,034.8**	**-383.7**	...	...	...
Russia	147,502.4	1,259.9	2,015.8	-755.9	358.1	147,104.6	-397.8
Canada	29,834.6	348.6	215.5	133.1	187.7	30,155.3	320.8
Mexico	94,356.1	2,258.7	421.6	1,837.1	-294.4	95,898.8	1,542.7
United States	266,487.0	3,915.0	2,322.3	1,592.7	842.3	268,922.0	2,435.0
North America	**390,677.7**	**6,522.3**	**2,959.4**	**3,562.9**	**735.6**	**394,976.1**	**4,298.5**
Australia	18,423.6	251.8	129.4	122.4	77.0	18,623.0	199.4
Japan	125,755.8	1,203.6	918.8	284.8	69.1	126,109.7	353.9
New Zealand	3,781.3	57.6	27.5	30.1	-7.5	3,803.9	22.6

See notes at the end of the table.

Table 3. Population Change (in Thousands) and Demographic Indicators for the Main Industrialized Countries, 1997 or the most recent year available - Concluded

Country	Total Fertility Rate	Total Growth Rate (per 1,000)	Infant Mortality Rate (per 1,000)	Life Expectancy (in years)		Total First Marriage Rate (per 1,000)		Total Divorce Rate (per 100)	Births Out of Wedlock (for 100 births)	Legal Abortions (for 100 live births)
				Males	Females	Males	Females			
Austria	1.36	0.9	4.7	73.9	80.2	498	554	38.0	28.0	20.5
Belgium	1.55	2.2	6.1	73.8	80.5	522	570	58.1	15.0	9.6
Danemark	1.75	3.8	5.3	72.9	78.0	647	707	40.0	46.3	25.4
Finland	1.75	3.1	3.9	73.0	80.5	523	568	48.0	35.3	15.7
France	1.71	4.0	5.1	74.1	82.0	520	540	38.7	37.9	21.4
Germany	1.36	0.5	4.9	73.6	79.9	500	575	32.4	17.0	16.4
Greece	1.32	2.0	6.3	75.1	80.4	730	758	14.0	3.3	9.9
Ireland	1.91	11.1	6.2	73.3	78.7	..	..	..	24.8	..
Italy	1.22	1.8	5.5	74.9	81.3	598	625	10.0	8.3	25.4
Luxemburg	1.71	12.9	4.2	73.3	79.9	500	560	37.0	15.0	..
Netherlands	1.57	5.3	5.2	74.7	80.3	505	547	33.0	16.9	11.0
Portugal	1.46	2.3	6.8	71.1	78.6	716	731	17.9	19.5	..
Spain	1.15	1.3	5.7	74.4	81.6	570	589	12.0	10.8	12.9
Sweden	1.52	0.4	3.6	76.5	81.5	418	442	53.9	53.9	33.8
United Kingdom	1.71	3.1	5.9	74.3	79.5	..	..	46.0	35.5	23.9
Iceland	2.04	9.3	5.5	75.9	80.0	..	..	..	60.7	18.9
Norway	1.85	5.7	4.1	74.8	80.8	500	540	44.0	48.3	22.8
Switzerland	1.48	1.7	4.8	75.7	81.9	585	640	39.0	7.3	..
Canada	1.55	10.8	5.5	75.8	81.4	502	537	33.5	..	10.4
Mexico	2.73	16.3	28.1	72.0	76.6	..	..	..	..	..
United States	2.06	9.1	7.5	73.0	79.0	584	595	..	32.2	38.7
Australia	1.78	10.8	5.3	75.6	81.3	560	580	..	28.1	..
Japan	1.44	2.8	4.3	76.6	83.0	..	..	..	1.2	29.4
New Zealand	1.97	6.0	6.5	74.3	79.6	..	..	48.9	41.8	26.4

Sources: The data comes mainly from an article by Alain Monnier (***Population***, Volume 53, Number 5, 1998) and in others cases directly from the various national statistical agencies. Life expectancy comes from annual tables, sometimes from biennial or triennial tables.

Canada, after the United States and Russia, has the greatest positive balance of international migration of the industrialized countries. According to the figures in Table 3, the places with negative net migration appear to be mainly certain countries in Central Europe (Poland, Romania, Switzerland) and Eastern Europe (Estonia, Latvia). For its part, Mexico has a strikingly negative balance of migration (-294,400 individuals). Even though Mexico quickly recovered from its 1995 financial and monetary crisis, the migration of thousands of Mexicans to the United States has not fallen off.

An examination of the growth rate of the main industrialized countries shows that only five countries have a rate exceeding 10.0 per 1,000. Despite an exodus of its population to the United States, Mexico is far out in front with a growth rate of 16.3 per 1,000, followed by Luxembourg (12.9 per 1,000), Ireland (11.1 per thousand), and Canada and Australia with identical rates of 10.8 per 1,000.

Sweden, Germany and Austria have a growth rate approaching zero, with less than 1.0 per 1,000. The situation in Bulgaria (-6.8 per 1,000) and the Baltic states of Latvia (-8.7 per 1,000) and Estonia (-5.7 per 1,000) is troubling. These countries have experienced a loss of population for the second consecutive year, and their negative growth puts them far behind the other industrialized countries.

Russia is also experiencing a period of depopulation, with a negative overall growth of -2.7 per 1,000. The number of returning migrants, primarily from other republics of the former USSR, has not been sufficient to offset the excess of deaths over births (amounting to 755,900 persons). Apart from the sizable number of deaths in relation to births, Russians' life expectancy is closer to that of countries of Southeast Asia and south central Europe than that of the G7 countries. For example, the life expectancy of Russian males is 14 years lower than that of Canadian males. For females the difference is not as great but is nevertheless sizable (8 years in favour of Canadian females). Briefly put, the difficult and lengthy economic transition that Russia is experiencing is certainly not unrelated to this ongoing demographic deterioration.

As to life expectancy in the main industrialized countries, the Japanese of both sexes still have the greatest life expectancy, with an average of 76.6 years for males and 83.0 for females. ***Canadian males rank fourth with an average life expectancy of 75.8 years, behind their Swedish and Icelandic counterparts (76.5 years and 75.9 years respectively). For their part, Canadian females rank sixth, with a life expectancy of 81.4 years***. On this score, Canada is in a favourable position in relation to its neighbour to the south: the United States barely ranks among the top 20 industrialized countries, for both sexes.

Although the difference in life expectancy between males and females has decreased in some countries (including Canada), it is still sizable. Ranking

first in this regard, France has an average life expectancy gap that is of special note (7.9 years). In Iceland, excess male mortality is the lowest of all industrialized countries: the gap between males and females (4.1 years) is only slightly more than half the gap in France. In Canada, the difference is 5.6 years, roughly half a year under the average gap in the main industrialized countries (6.0 years). Finland, Portugal and Spain, like France, stand out as having gaps greater than seven years between male and female life expectancies.

The demographic dissimilarities of the most industrialized countries are not limited to life expectancy. The total first-marriage and divorce rates are especially noteworthy in this regard. It is in Greece (730 per 1,000 males and 758 per 1,000 females) and Portugal (716 per 1,000 males and 731 per 1,000 females) that marriage holds the greatest attraction. Canada's total first-marriage rate barely exceeds 500 per 1,000, and it therefore ranks 13th for males and 16th for females, whereas the United States ranks respectively 6th and 5th. While fertility has fallen sharply in Italy, marriage continues to play a major social role there: Italy's total first-marriage rates are nearly 600 per 1,000 for both males and females, making it one of the top-ranking countries in this regard. Furthermore, as a bastion of Catholicism, Italy has the lowest total divorce rate, with 10.0 divorces per 100 marriages, despite a slight increase over the previous year. Belgium has the highest rate, with 58.1 divorces per 100 marriages. Canada is midway between the two extremes (33.0 divorces per 100 marriages).

For most industrialized countries, fertility outside marriage has increased slightly over last year, while the rankings have remained unchanged. The data show that it is still the Japanese who appear to assign the greatest importance to establishing legal bonds between partners prior to family formation (1.2 births outside marriage per 100 births). By contrast, more than half of births in Iceland take place outside marriage (60.7 per 100). The trends shaping up for the decade 1990-2000 do not suggest a slackening in births outside marriage, particularly since the phenomenon of common law union, which accounts for a sizable proportion of births outside marriage, is increasingly part of the way of life in many industrialized countries.

NUPTIALITY

The number of marriages again declined in Canada in 1997, reaching 153,306 (Table A2, appendix). The 1997 statistics confirm that after a short upward interlude in 1994 and 1995, the number of marriages resumed its downward trend in 1996. As in 1996, the number of marriages in 1997 fell by nearly 3,400 (2.2%) in relation to the previous year. Not since 1966 has there been such a small number of marriages (155,596), but at that time, Canada's population was much smaller. Unlike in previous years, the drop in the number of marriages equally affected first marriages and remarriages (Table 4).

The decline in nuptiality is reflected in curves showing the distribution of first marriage rates among cohorts (Figures 4a and 4b). The curves for successive cohorts have increasingly lower peaks and are skewed increasingly to the right. This indicates both a decline in the intensity of cohort nuptiality and a tendency for people to marry later in life.

Provincial Variations

Not all provinces were affected to the same extent by the drop in the number of marriages. Some, like Newfoundland and Saskatchewan, registered a few more marriages in 1997 than in 1996. However, while the change was positive, it was negligible both in absolute numbers (an increase of 33 and 36 marriages respectively) and in relative terms (the increase was less than 1%). By the same token, the change in Quebec and Alberta was negative but was so slight as to be practically nil.

In Ontario, the number of marriages fell by nearly 1,700 in one year, going from 66,208 in 1996 to 64,535 in 1997. This was the largest provincial decrease in absolute numbers, but that is only because of Ontario's demographic weight within Canada; in percentage terms the decrease was 2.5%, comparable to the rate for Canada as a whole.

By contrast, the declines were much steeper in British Columbia and the Maritime provinces. In British Columbia, for example, there were nearly 1,000 fewer marriages in 1997 than in the previous year; this was a decrease of 4.3%, roughly double the Canadian average. In the Maritime provinces, owing to their small populations, the changes in absolute numbers were much less sizable: marriages were down by 227 in New Brunswick, 215 in Nova Scotia and 48 in Prince Edward Island. Nevertheless, these provinces as a group registered the largest relative declines in the number of marriages, namely 6.3%, 4.0% and 5.2% respectively.

Table 4. Marriages, First Marriages and Remarriages, Canada, 1970-1997

Year	Number of Marriages	Number of First Marriages		Number and Proportion of Marriages in which at least one Spouse has been Previously Married		Number and Proportion of Remarriages in which both Spouses had been Previously Married	
		Males	Females	Number	Percentage	Number	Percentage
1970	188,428	167,267	167,421	29,975	15.9	12,193	40.7
1971	191,324	168,944	169,072	31,698	16.6	12,934	40.8
1972	200,470	176,537	177,155	33,582	16.8	13,666	40.7
1973	199,064	173,355	174,135	36,047	18.1	14,591	40.5
1974	198,824	170,678	172,107	39,063	19.6	15,800	40.4
1975	198,085	167,022	168,817	42,300	21.4	17,031	40.3
1976	193,343	155,679	157,412	43,098	22.3	17,499	40.6
1977	187,344	154,906	156,854	44,750	23.9	18,178	40.6
1978	185,523	151,884	154,016	46,254	24.9	18,892	40.8
1979	187,811	152,731	154,982	48,309	25.7	19,600	40.6
1980	191,069	154,138	156,918	50,600	26.5	20,422	40.4
1981	190,082	151,978	154,506	52,340	27.5	21,340	40.8
1982	188,360	149,419	152,825	52,979	28.1	21,438	40.5
1983	184,675	144,960	147,968	53,342	28.9	22,080	41.4
1984	185,597	144,674	147,907	55,436	29.9	23,177	41.8
1985	184,096	144,009	146,718	54,632	29.7	22,833	41.8
1986	175,518	137,665	138,523	52,678	30.0	22,170	42.1
1987	182,151	138,454	139,324	60,106	33.0	26,529	44.1
1988	187,728	142,956	143,943	61,665	32.8	26,892	43.6
1989	190,640	145,733	146,242	62,276	32.7	27,029	43.4
1990	187,737	143,637	145,350	60,393	32.2	26,094	43.2
1991	172,251	131,996	133,584	55,278	32.1	23,644	42.8
1992	164,573	125,505	126,955	53,547	32.5	23,139	43.2
1993	159,317	121,104	122,479	52,406	32.9	22,645	43.2
1994	159,958	121,497	122,641	52,758	33.0	23,020	43.6
1995	160,251	121,312	122,131	53,477	33.4	23,582	44.1
1996	156,691	117,574	118,285	53,481	34.1	24,042	45.0
1997	153,306	115,186	115,875	52,217	34.1	23,334	44.7

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

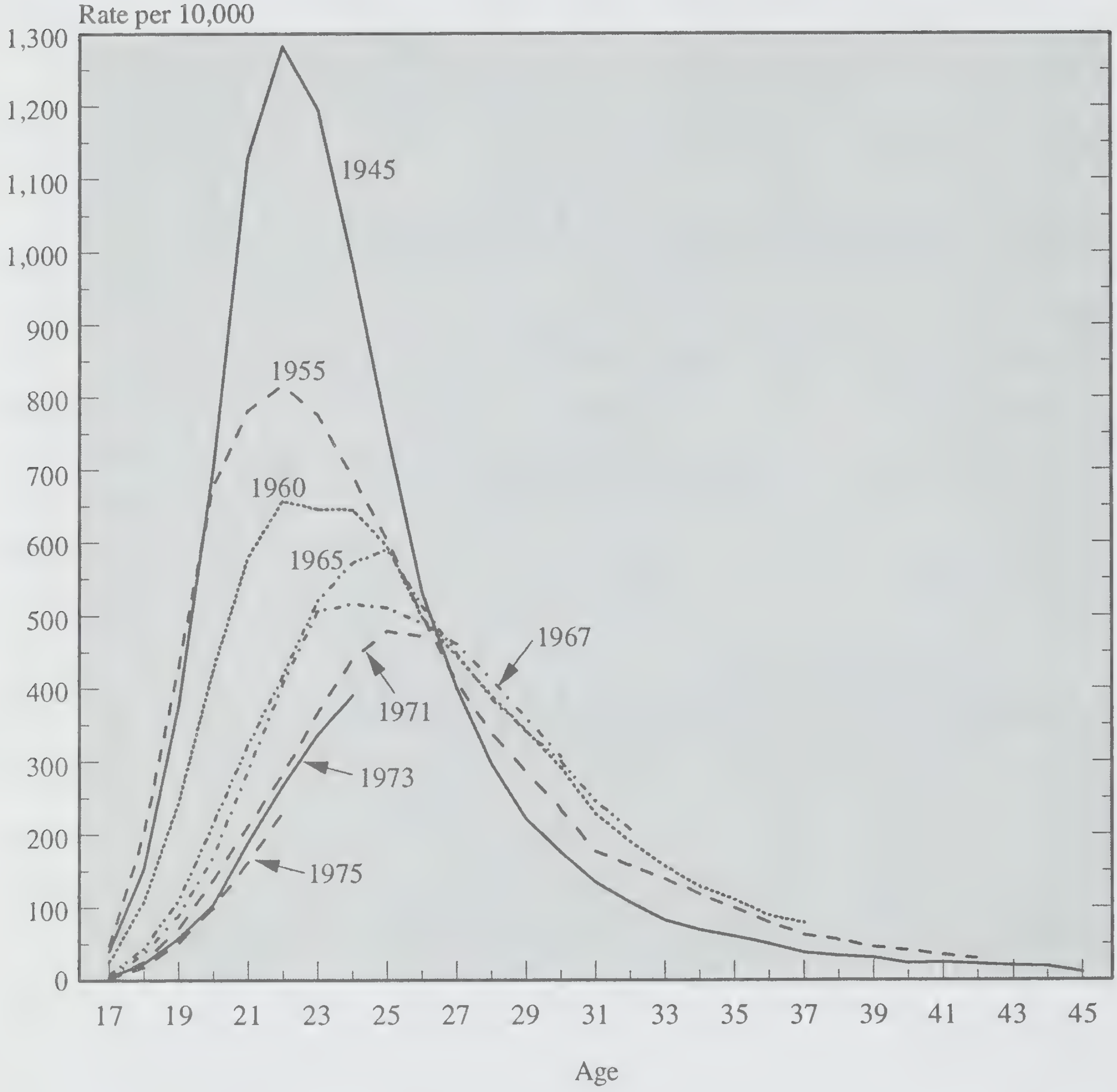
Table 5. Total First Marriage Rate, Canada, Provinces and Territories, 1976-1997 (per 1,000)[1]

Province	1976	1981	1986	1991	1992	1993	1994	1995	1996	1997
	Males									
Newfoundland	755	653	589	600	558	546	592	629	607	630
Prince Edward Island	880	701	711	727	690	721	673	695	747	685
Nova Scotia	743	686	595	575	556	547	559	566	586	556
New Brunswick	772	660	600	581	554	538	551	559	581	550
Quebec	637	546	430	381	338	330	339	331	327	329
Ontario	756	692	623	610	590	568	572	584	579	567
Manitoba	767	722	615	600	604	592	592	607	582	573
Saskatchewan	816	710	588	622	610	616	632	641	628	633
Alberta	765	644	566	597	590	592	604	611	569	565
British Columbia	707	684	582	601	596	577	571	556	521	502
Yukon	600	693	484	470	538	401	430	541	453	409
Northwest Territories[2]	482	457	351	284	269	276	298	282	268	260
CANADA	721	645	558	548	526	513	520	524	512	505
CANADA LESS QUEBEC	755	682	603	604	588	573	578	585	571	559
	Females									
Newfoundland	721	631	580	613	576	560	611	649	624	653
Prince Edward Island	828	668	742	730	703	733	711	734	782	718
Nova Scotia	736	672	631	606	586	574	582	592	597	583
New Brunswick	760	649	626	608	584	570	574	594	618	587
Quebec	640	560	442	427	380	370	380	370	363	362
Ontario	745	685	658	653	633	609	609	618	609	597
Manitoba	748	712	660	651	651	638	637	657	626	611
Saskatchewan	787	698	628	656	640	648	663	665	653	655
Alberta	768	689	616	643	633	634	652	649	613	607
British Columbia	711	695	623	661	646	627	629	607	563	540
Yukon	634	715	573	521	567	464	464	543	486	422
Northwest Territories[2]	561	474	399	311	293	309	333	315	282	310
CANADA	715	651	589	594	570	555	562	563	548	539
CANADA LESS QUEBEC	746	685	640	648	630	614	619	623	605	592

[1] Males aged 17 to 49 and females aged 15 to 49.
[2] Nunavut included.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

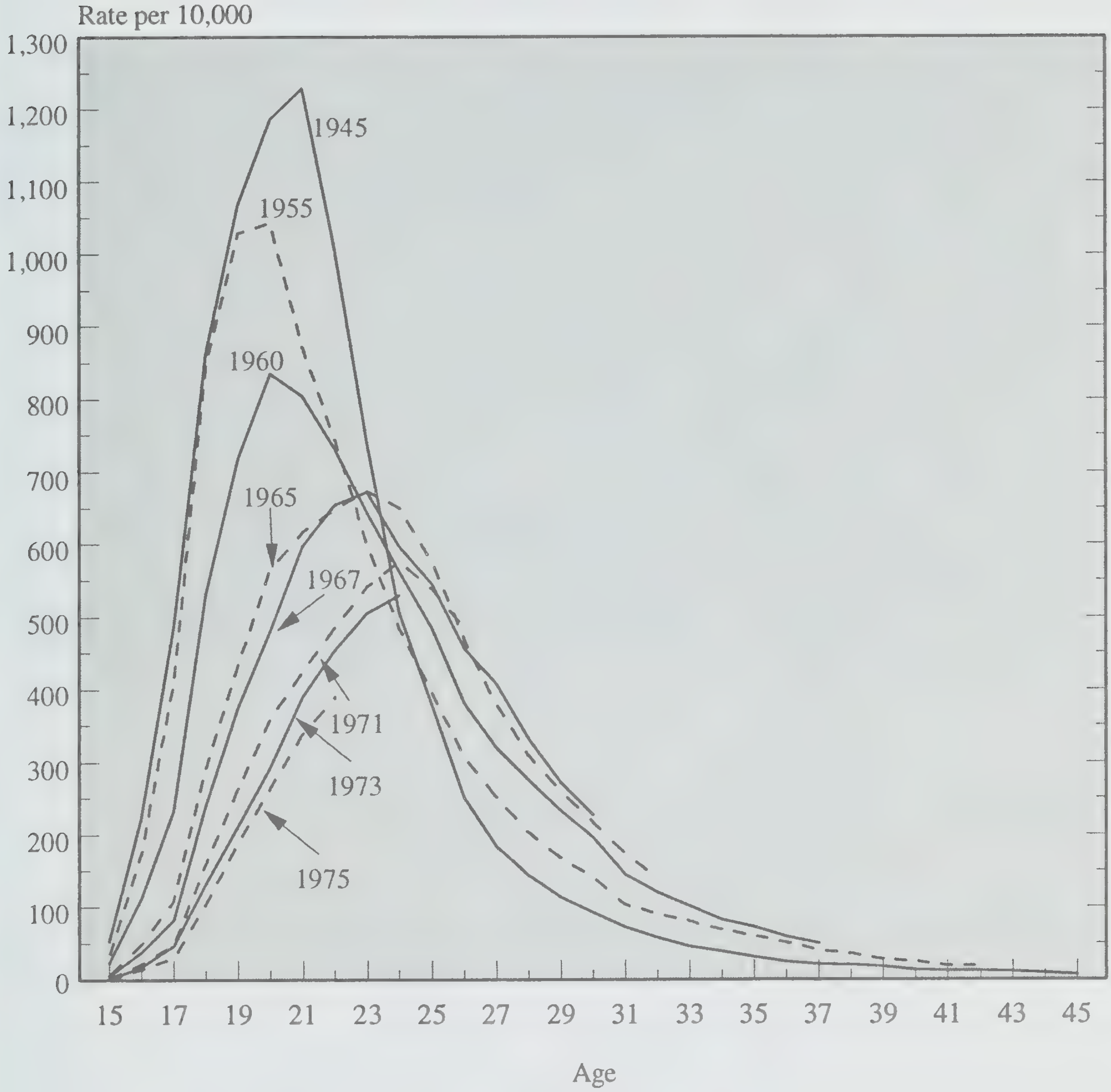
Figure 4A. First Marriage Rates, Males, Canada (Some Recent Cohorts)



Source: Table A3.1, appendix.

Table 5, which shows the total first marriage rate, illustrates the decline of marriage since the mid-1970s. Nuptiality is declining throughout Canada, but in the past two decades, the drop was greater in Quebec than elsewhere. Already in 1976, Quebec's total marriage rate of 640 per 1,000 was lower than that of the other provinces. However, Quebec's rate fell by nearly half in some twenty years, while the other provinces' rates fell by roughly 25% in the same period. In 1997, the rate in Quebec was 329 and 362 marriages per 1,000 for men and women respectively. Although not on the scale seen in Quebec, the drop in nuptiality was nevertheless sizable in the other provinces, with the rate standing at roughly 560 marriages per 1,000 for men and 600 per 1,000 for women.

Figure 4B. First Marriage Rates, Females, Canada (Some Recent Cohorts)

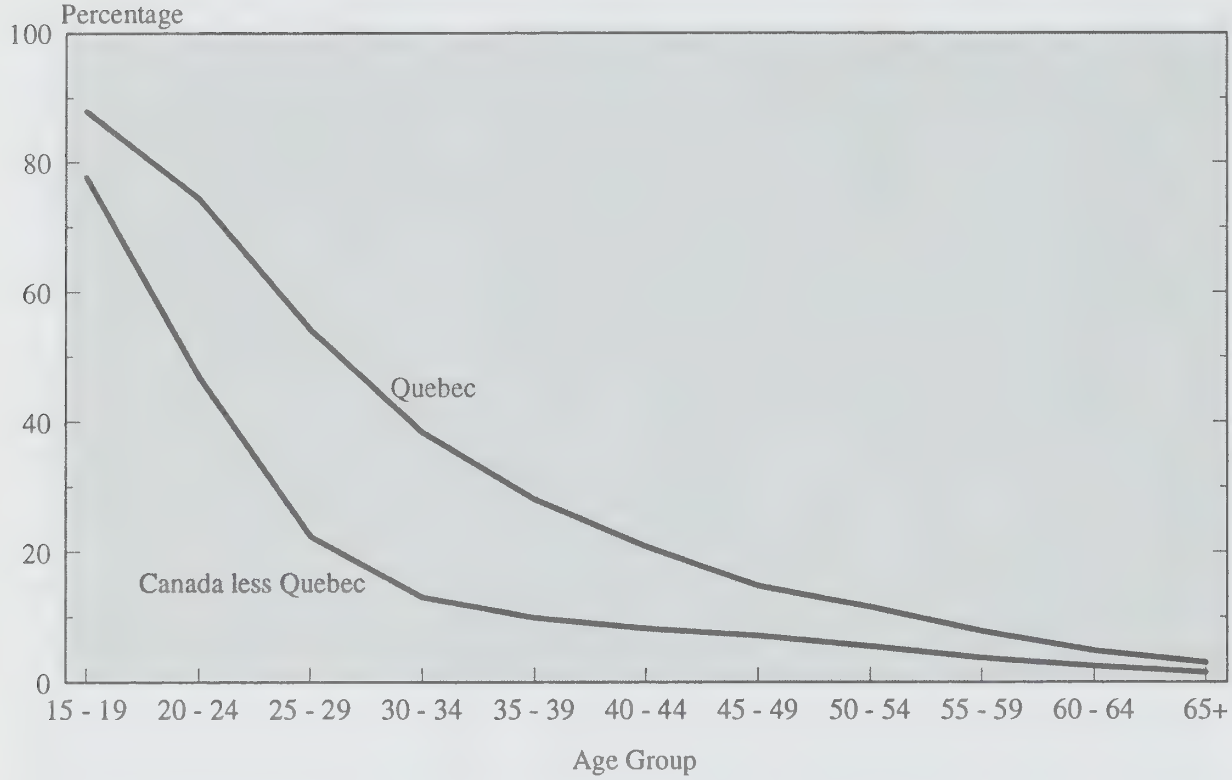


Source: Table A3.2, appendix.

By contrast, the recent situation seems to indicate a stabilization of nuptiality in Quebec and a continuing decline elsewhere in Canada. Since 1992, Quebec's total marriage rate has varied no more than 10 points, either upward or downward depending on the year. In the other provinces, the trend is more clearly downward, and during the same period the total marriage rate fell on average 30 points for men and nearly 40 points for women.

The decline in nuptiality is due to the growing popularity of common-law unions as a conjugal way of life. That phenomenon occurred earlier in Quebec and has been more widespread there than in the other provinces. According to data from the 1996 Census, which is the most recent source

Figure 5. Proportion of Couples Living in Common Law by Age of the Female Partner, Quebec and Canada Less Quebec, 1996



Source: Statistics Canada, 1996 Census of Canada, unpublished data.

of information on common-law unions, 25% of Quebec couples were living in common-law relationships. For the other provinces combined, the corresponding proportion was only half that figure (12%). The proportion of couples living in common-law relationships is much higher among the population aged 25 to 29. It is estimated that 54% of Quebec couples in which the female partner was aged 25 to 29 were living in common-law relationships, as compared to 22% of comparable couples in the other provinces (Figure 5).

In general, the spread of a new behaviour within a society may be broken down into three stages. Initially, the new behaviour is adopted by only a few pioneers, and it spreads slowly. Then, if it survives, the new behaviour is adopted by a growing number of individuals, and the proportion of persons who have adopted it grows quickly. However, after some time, most and then all of those who were likely to adopt it have done so, and its spread within the population slows. It is impossible to determine in advance the length of each of these stages, or the levels that will be reached at each inflection point on the curve representing the change over time in the proportion of participants within the population. But sooner or later the saturation point is reached, and the phenomenon ceases to grow.

It is possible that the phenomenon of common-law unions may be approaching a leveling off point in Quebec. In that province, the proportion of persons living in common-law relationships has reached a level comparable to that of Northern European countries where common-law unions made their appearance much earlier as a conjugal way of life. A stabilization of the phenomenon in Quebec might explain the relative stability recently exhibited by the first marriage rate for that province, but it will be necessary to wait for data from the next census to confirm this.

DIVORCE

The number of divorces, which stabilized at around 80,000 per year at the start of the 1990s, has been dropping steeply since 1995. In three years, the number went from 78,900 to 67,400, a decrease of 11,500 divorces or 15% (Table A4, appendix). ***The decrease of some 4,100 divorces in 1997 is a 6% decline from the previous year and a continuation of the drop registered in 1996 (-8%)***. The most recent data available thus seem to confirm a new trend identified in the last edition of the ***Report on the Demographic Situation***. The decrease in the number of divorces also affects the total divorce rate, which was down nearly 6% in 1997 (Table A5, appendix).

At the level of 67,400, the number of divorces is at its lowest point since 1985. However, 1985 was an exceptional year in this regard, since many divorces that should have been granted during that year were postponed to the following year in anticipation of changes to the Divorce Act, which were designed to make divorce easier. With the exception of 1985, the number of divorces registered in 1997 is the lowest since 1980.

The emergence of this new trend may be explained by two factors. First, much of this drop in the number of divorces is due to the sizable decrease in the number of marriages in Canada several years earlier. Between 1990 and 1997, the annual number of marriages declined by nearly 35,000 owing to the growing popularity of common-law unions in conjugal life. This significantly reduced the number of potential candidates for divorce. Second, there was also an increase in the average age at marriage, and marriages entered into by older persons tend to be of longer duration.

Provincial Variations

The fall in the number of divorces affected almost all provinces. Only Prince Edward Island and Manitoba registered slightly more divorces than in the previous year (Table A4, appendix), but these changes were practically nil — respectively 6 and 22 divorces more than in the previous year. While for all practical purposes the number of divorces was down in all regions of the country, the size of the decrease varied greatly from one province to another.

Three provinces stand out with decreases in 1997 that in relative terms were two to three times greater than at the national level. Newfoundland registered the greatest relative decrease. The 820 divorces in that province in 1997 represent a decline of 22% from the previous year. This follows a major increase (8%) registered in that province in 1996, in contrast to the strongly downward trend at the national level. In British Columbia and Nova Scotia, the number of divorces was down 11% from 1996, twice the decrease

at the national level. In these provinces, 1996 was also characterized by either an increase in the number of divorces (British Columbia), or a smaller decrease than at the national level (Nova Scotia). In Ontario (-6%), New Brunswick (-5%) and Alberta (-4%), the relative changes were of the same magnitude as for Canada as a whole, while Quebec (-3%) and Saskatchewan (-1%) registered smaller declines.

At the provincial level, annual variations in the number of divorces are often due to administrative factors. The courts' fluctuating ability to handle cases or changes made to legal aid can have an impact on the number of divorces granted during the year. These factors explain why, at the provincial level, a fluctuation in one direction is often offset by a fluctuation in the other direction the following year. We should therefore refrain from interpreting the sometimes-sizable annual variations in the number of divorces at the provincial level as actual changes in behaviour. It is better to observe trends over a longer period before drawing such conclusions. On this score, it is noteworthy that for most provinces, the number of divorces in 1997 was at its lowest point since at least 10 years.

While divorce is thus declining throughout Canada, it should be kept in mind that there are still sizable variations from one province to another. These variations appear in Table 6, which presents crude divorce rates by province. As the table shows, the rates are generally much lower in the Atlantic provinces than elsewhere in Canada. Newfoundland in particular stands out as having the lowest divorce rate of all provinces, year after year. The divorce rate is also generally lower in the Prairie provinces (except for Alberta), but the difference is not as great as in the Atlantic provinces. As for the central provinces, Quebec and Ontario, each year they register rates quite similar to those for Canada as a whole. At the western extremity of the country, Alberta and British Columbia stand apart with a higher divorce rate than the other Canadian provinces.

While major differences still exist between provinces, the general trend seems to be toward a convergence in divorce rates in Canada. For example, in the early 1980s, the crude divorce rate was 2.5 times higher in Canada as a whole than in Newfoundland, the province with historically the lowest rates. Today the corresponding ratio is only 1.5. Similarly, in the early 1980s, Alberta and British Columbia, the provinces with the highest divorce rates, had crude rates nearly 40% higher than Canada as a whole. In 1997, the difference between their crude divorce rate and that of Canada as a whole was only about 13%.

Duration-Specific Divorce Rates

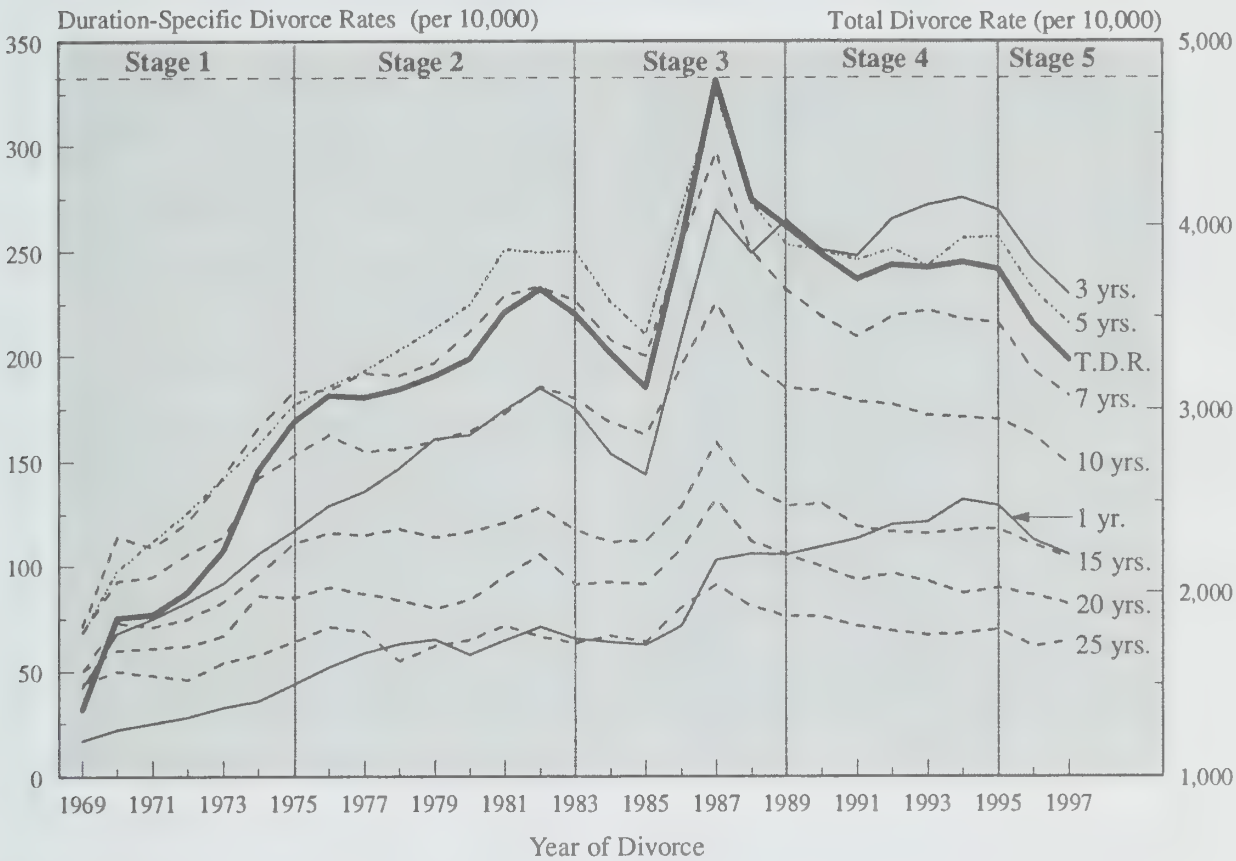
The total divorce rate is a cross-sectional measure (for a specific year) of the intensity of divorce, net of annual fluctuations in the number of marriages. It represents the number of marriages which, within a fictitious cohort, would

Table 6. Crude Divorce Rate (per 10,000), Canada and Provinces, 1980 to 1997

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
1980	9.69	13.17	27.13	18.78	21.36	25.66	22.06	18.98	34.57	34.50	25.30
1981	9.90	15.11	26.74	18.89	29.31	24.60	23.15	19.80	36.69	33.76	27.26
1982	10.88	16.55	26.52	23.48	28.24	26.50	22.85	18.38	37.50	35.38	28.04
1983	12.27	17.14	26.92	27.15	26.30	25.52	24.90	19.96	36.64	32.17	27.03
1984	10.17	15.40	25.80	19.79	25.40	23.59	24.36	19.58	35.37	30.51	25.45
1985	9.68	16.68	26.40	18.79	23.72	22.43	21.37	18.79	33.72	28.01	23.98
1986	11.92	15.50	29.34	23.84	28.36	29.19	27.32	24.09	39.31	37.61	30.00
1987	19.42	21.39	30.88	27.41	32.58	40.53	35.73	28.74	39.15	39.95	36.37
1988	15.76	20.81	27.79	22.91	29.74	33.04	28.15	24.33	35.62	34.54	31.16
1989	17.44	19.06	27.96	22.43	28.62	30.96	26.39	24.14	33.00	33.32	29.68
1990	17.58	21.53	26.59	22.96	29.23	28.13	25.31	23.47	33.32	29.69	28.33
1991	15.74	20.64	24.92	22.16	28.70	26.56	25.14	22.34	32.35	30.73	27.48
1992	14.94	17.34	25.06	21.82	27.69	28.82	23.87	23.16	31.19	30.06	27.85
1993	16.03	17.15	25.72	21.43	27.44	27.04	23.12	22.24	32.25	30.49	27.25
1994	16.23	18.63	24.68	20.91	25.29	28.37	24.43	23.31	30.22	31.06	27.17
1995	17.29	19.29	24.73	19.37	27.80	26.77	23.70	22.88	27.74	27.37	26.45
1996	18.91	17.40	23.93	19.26	24.85	22.55	22.95	21.74	27.00	28.07	24.11
1997	14.83	17.75	21.21	18.21	23.92	20.98	23.09	21.50	25.31	24.46	22.46

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Figure 6. Duration-Specific Divorce Rates for Various Durations of Marriage, by Year of Divorce and Total Divorce Rate, Canada, 1969 to 1997



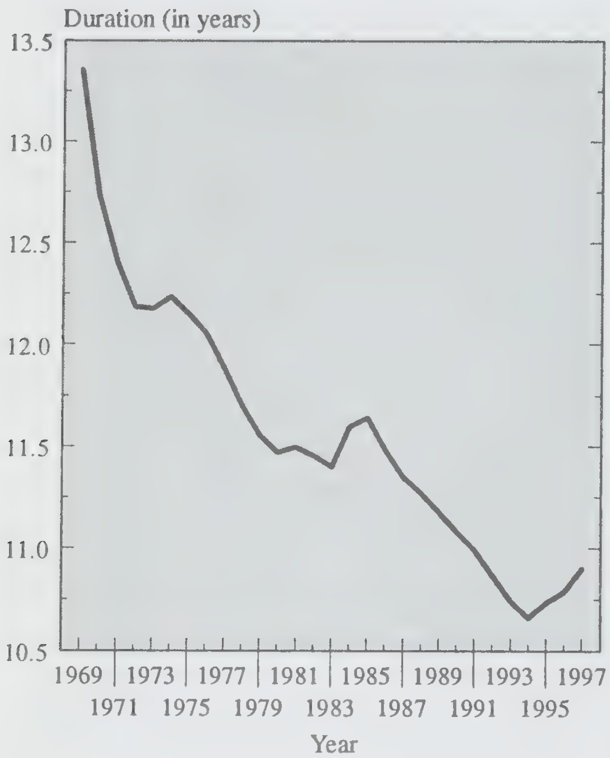
Source: Table A5, appendix.

end in divorce if divorce rates by length of marriage, observed in a given year, were applied to that cohort. In other words, the total divorce rate summarizes the annual variations in all divorce rates by length of marriage.

It is useful to determine whether annual change in the total divorce rate reflect similar changes for all rates by length of marriage, or whether, on the contrary, annual changes in the total rate result from changes in rates for particular lengths of marriage while the rates for other lengths of marriage remain stable or even move in the opposite direction. From an examination of Figure 6, several observations may be made on this subject. In particular, we can identify five stages in the recent history of divorce in Canada:

1) Before the passage of the Divorce Act in 1968, it was difficult to terminate a marriage legally. Thus, during a first period that extended roughly from the year of adoption of the Divorce Act to 1975, divorce became more widespread and met with growing acceptance within society. The period was also marked by a catch-up effect, with divorces sometimes serving to legalize long-standing separations. Accordingly, divorce rates increased

Figure 7. Average Duration of Marriage at Time of Divorce, Canada, 1969-1997



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

for all lengths of marriage. This period is characterized by a rapid increase in the total divorce rate, which rose from 1,400 divorces per 10,000 marriages in 1969 to approximately 3,000 divorces per 10,000 marriages in 1975. Furthermore, the average length of marriage at the time of divorce fell sharply (Figure 7).

2) Compared to the stages preceding and following it, the second stage, which began in 1975 and ended in 1983, was characterized by a relative stabilization in the total divorce rate. To be sure, the rate continued to rise, but much more slowly, going from roughly 3,000 divorces per 10,000 marriages in 1975 to approximately 3,500 divorces per 10,000 marriages in 1983. This very slow increase is due to the near stabilization of the rates for those married longer (more than 10 years), whereas the divorce rates for couples married more recently continued to climb. In combination, these two patterns obviously brought about a decrease in the average length of marriages ending in divorce, but the decrease was less rapid than in the preceding stage.

3) The following stage, which extended from 1984 to 1989, was a time of some upheaval associated with the reform of the Divorce Act, passed in 1985. It is characterized by sudden changes in the total divorce rate, which first fell slightly, then increased sharply following the passage of the new Act. The fluctuations in rates by length of marriage were greater for intermediate lengths (3 to 10 years of marriage) than for more recent marriages or older marriages. In particular, only the rates for intermediate lengths of marriage fell substantially before 1985. After 1985, the rise in the rates by length of marriage was especially great since there was a "backlog" of divorces facilitated by the reform. Over the period as a whole, the total rate is a poor measure of the intensity observed in the marriage cohorts, because it is overly disrupted by the period effects associated with the changes to the Act. Thus, the total divorce rate for 1987, which stood at 4,800 divorces per 10,000 marriages, cannot be interpreted as meaning that nearly one marriage in two ended in divorce.

4) In the fourth stage, which according to our time scheme would extend from 1990 to 1995, the total divorce rate almost achieved stability at approximately 3,800 divorces per 10,000 marriages. However, this stability masks major changes in divorce rates by length of marriage. As Figure 6 shows, the divorce rates for older marriages (marriages of more than 7 years' duration) declined steadily throughout the period. The decreases can be substantial for specific lengths of marriage, while by contrast, the divorce rates for more recent marriages (those with durations of 1 to 3 years) increased. The modal length of marriage fell from five years to three years during this period. This clearly indicates a new drop in the average length of marriage at the time of divorce.

5) The fifth and final stage, which is probably not yet completed, corresponds to the recent decline in divorce observed in 1996 and 1997. It is worth noting that ***during this period, all rates by length of marriage evolve in the same direction as the total divorce rate. This is the first time that this convergence has occurred*** without it being due to changes to the Act. ***As a result, for the first time since 1969, there is a clear increase in the average length of marriages ending in divorce*** (Figure 7).

Conclusion

The number of divorces peaked at 96,200 in 1987 as a consequence of changes to the Divorce Act. After a period of adjustment, it stabilized at approximately 78,000 per year between 1990 and 1995. In 1996 and again in 1997, the number of divorces dropped sharply, by 8% and 6% respectively, reaching a level of 67,400 in 1997. ***There is every indication that a new downward trend in divorce has recently begun in Canada. The number of divorces and crude divorce rates are down in most provinces of Canada, and an analysis of the number of divorces by length of marriage shows that this new trend results from a decrease in the rates for all lengths of marriage***. Furthermore, this is the first time since the passage of the Divorce Act of 1969 that for three consecutive years there has been an increase in the average length of marriages ending in divorce.

This decline in divorce could be due to a selection effect associated with the increase in common-law unions (there is a growing tendency for unions most likely to end in a breakdown not to be legalized), and also to the increase in the average age at marriage. Nevertheless, it is hard to predict when this downward trend will end and at what level a new stage of stability will be reached.

BIRTHS AND FERTILITY

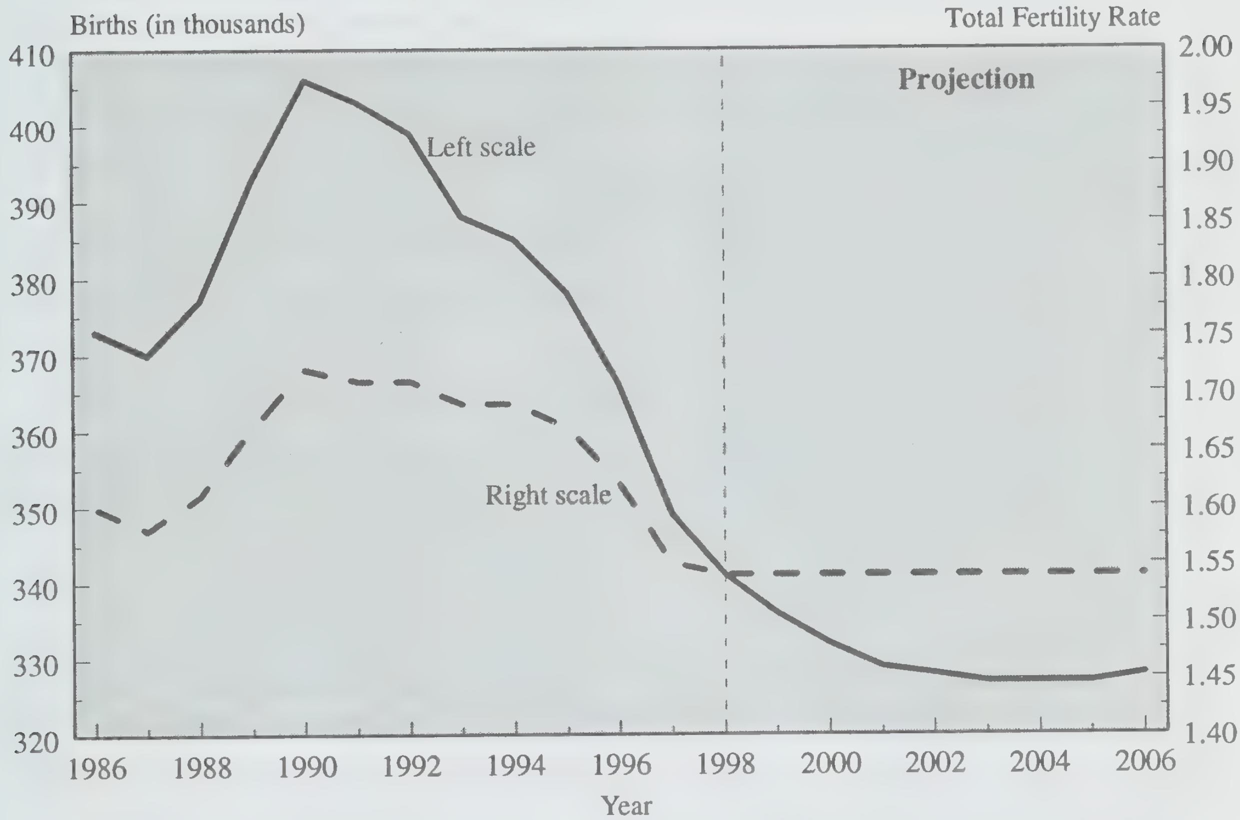
The number of births fell by just over 17,600 in 1997 to 348,598 (Table A6, appendix). Since the number of births is declining and the population is continuing to grow, the crude birth rate is falling even more rapidly, and it stood at 11.6 per 1,000 in 1997 (Table 1). *The total fertility rate also fell sharply, reaching 1.55 children per woman in 1997, the lowest level ever recorded in Canada*. The downward movement of these two indicators is observed in all provinces, but it appears to be greater in the eastern and central provinces.

This was the seventh consecutive year for which a decrease in the number of births was registered in Canada, but 1997 stands out by the size of the drop. That decrease of 4.8% in relation to the previous year is the greatest since 1966, both in numbers and percent. This decline in the number of births results from both a structural effect, namely changes in the numbers of women of childbearing age, and the effect of actual changes in the fertility behaviour of Canadians, reflected in a sizable drop in period fertility observed in 1996 and 1997. The former effect is itself the result of the decline in fertility that Canada experienced some thirty years ago. As a consequence of this decline, large cohorts of the baby boom have been replaced in the main childbearing years by much smaller cohorts of the baby bust. This effect is therefore structural in nature, and is largely responsible for the annual decrease in the number of births since 1991.

All things being otherwise equal, this structural effect will favour a continuing decline in births for a few more years yet. According to a population projection scenario whereby age specific fertility rates remain at current levels, the number of births will decline until 2002-2003 (Figure 8).

The second effect, the behavioural change or the real decline in fertility, is more troubling for those interested in the future direction of births in Canada. This may best be demonstrated by following the recent trend in the total fertility rate. The advantage of this indicator is that it is not affected by fluctuations in the size and structure of the population. The total fertility rate represents the average number of children that a woman would have if throughout her life she experienced the fertility observed in a given year. Since births of males always slightly outnumber births of females, and to take account of mortality up the childbearing age, it is calculated that the total fertility rate has to reach 2.1 children per woman to ensure that replacement levels are maintained. In actual fact, after falling rapidly at the end of the 1960s, the total fertility rate has remained below replacement level since 1971. However, it exhibited some stability starting at the end of the last decade, fluctuating between 1.72 and 1.67 children per woman from 1989 to 1995. In dropping to 1.62 in 1996 and 1.55 children per woman in 1997, the total fertility rate registered two

Figure 8. Births and Total Fertility Rate, Canada, 1986-2006



Sources: Statistics Canada, Demography Division, Population Estimates Section, Research and Analysis Section and Population Projections Section, special scenario and Health Statistics Division, Health Status and Vital Statistics Section.

successive decreases, of 3.0% and 4.3% in 1996 and 1997 respectively, even though the levels were already very low. According to the most recent data available, the rate could continue to drop in 1998.

This period indicator is sensitive to changes in the timing of births, and it is therefore important to determine which age groups are responsible for the observed decrease. As may be seen from Table 7, ***this decrease affects all rates below the 35 to 39 age group***. Among the youngest (15 to 19 years of age), the drop in the fertility rate is approximately 9%, both in 1996 and 1997. A low fertility rate among teenage girls is generally a desirable objective in modern societies, where more years of education are becoming increasingly necessary for successful integration into the labour market. At 20 per 1,000, the fertility rate of Canadian females aged 15 to 19 is well below the figure observed in the United States (54.0 per 1,000).

While the drop in fertility in 1997 affected almost all age groups, it was greater among young women than among older ones. The decrease was 6.5% for women aged 20 to 24 and 4.9% for those aged 25 to 29, thus continuing a trend that has persisted since the end of the baby boom. On the other hand, the decrease of 3.0% in the fertility rate of women aged 30 to

Table 7. Recent Fluctuations in Fertility Rates, by Age Group, Canada, 1995-1997

Age Group	Fertility Rate			Variations (%)	
	1995	1996	1997	1995-1996	1996-1997
15-19	24.3	22.1	20.0	-9.1	-9.6
20-24	71.9	68.4	64.0	-4.8	-6.5
25-29	112.5	109.1	103.8	-3.0	-4.9
30-34	88.0	87.0	84.4	-1.1	-3.0
35-39	31.5	32.6	32.5	3.6	-0.2
40-44	4.9	5.1	5.2	4.7	2.1
45-49	0.2	0.2	0.2	2.1	1.7
Total Fertility Rate	1.67	1.62	1.55	-2.6	-4.5

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

34, by continuing the slump observed the previous year, seems to confirm the reversal of an upward trend in fertility at those ages, a trend that began nearly twenty years ago. As to the fertility rates of women aged 35 to 39 and 40 to 44, they are almost unchanged.

In part then, the recent changes described above are in keeping with the longer-term evolution of fertility in Canada. In the past two decades, the fertility of younger women gradually decreased while a trend reversal was taking place among women aged 30 and over (Figure 9). Over a period of twenty years — that is, starting in the mid-1970s, when fertility at higher ages began to rise — the fertility rates for young women aged 15 to 19 and 20 to 24 fell by 40% and the rate for those aged 25 to 29 decreased by 20%.

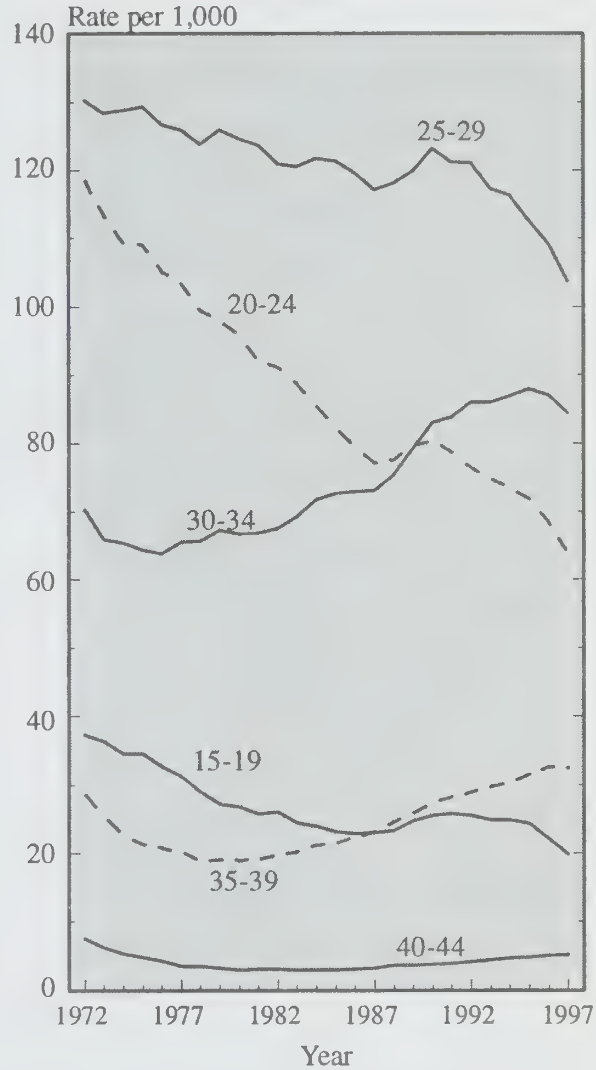
These decreases were formerly offset by increases in the fertility of women aged 30 to 34 and 35 to 39, which kept the total fertility rate relatively stable over the period. For example, the fertility of Canadian women aged 30 to 34 rose by 38% between 1976 and 1995, and in the early 1990s it even exceeded the fertility of those in the 20 to 24 age group. It is in this respect that the last two years are a break with the recent past. ***Since the trend reversal among women aged 30 to 34 no longer serves to offset the decrease observed among younger women, the total rate can no longer be maintained, and it too is now falling***.

Provincial Variations

The number of births has fallen in all provinces, but the declines are steeper in the eastern and central provinces than in those in the West. While the drop is 4.8% nationally, all provinces east of Saskatchewan except for New Brunswick saw a decrease in births of more than 5% between 1996

and 1997. Ontario, owing to its size, registered the greatest numerical decrease (-7,000 births), but it is in Quebec, where the decrease was -5,500 births, that the percentage change was the greatest (-6.4%). The Western provinces, especially Alberta, saw smaller declines in birth numbers: 2.5% in Alberta, 3.3% in Saskatchewan and 3.4% in British Columbia.

Figure 9. Fertility Rate by Age Group, Canada, 1972-1997



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

The total fertility rate is also dropping throughout Canada. The rate for Newfoundland, which recovered slightly in 1996, fell back in 1997 (-5.4%), and with a rate of 1.27 children per woman, that province has set a new record for low fertility in Canada. New Brunswick and Nova Scotia follow with total fertility rates of 1.44 and 1.45 children per woman respectively. Whereas ten years ago, the fertility of Quebec women, at 1.37 children per woman, was considerably lower than that of other Canadian women, the gap narrowed during the past decade, with the result that in 1996, the rates for the two regions were quite similar: 1.60 children per woman in Quebec compared to 1.63 in the rest of Canada (see Table A7, appendix). By contrast, in 1997, the total fertility rate fell more steeply in Quebec than elsewhere in Canada, dropping from 1.60 children per woman to 1.52 (-5.0%). With a rate of 1.83 children per woman, Saskatchewan regained its ranking as the most fertile province, a title that Manitoba (1.82 children per woman in 1997) had captured in 1995.

Conclusion

Owing to a slight increase in fertility, which was itself more attributable to a shift in the timing of births[8] than to an actual change in fertility behaviour,

---

[8] In particular an increase in fertility at higher ages at a time when the largest cohorts of the baby boom were approaching age 40.

the birth rate rose slightly in Canada in the early 1990s. Some observers saw this as the anticipated "echo" of the baby boom, that is, an increase in births resulting from the increase in the population of childbearing age. While the anticipated echo was greatly muted by the drop in Canadian fertility since 1960, the echo of the baby bust could actually be intensified by a further drop in fertility if trends of the past two years were to continue. This fear is amplified by the fact that this drop in fertility is widespread: it affects all provinces, all birth ranks and all age groups under age 35 (Table A6, appendix), at a time when Canada's economy is improving.

This new drop in fertility to historically low levels is therefore arousing renewed interest in its causes and consequences, not only among experts (demographers, economists, sociologists and policy analysts) but also in the general public, as evidenced by the recent success of books such as ***Boom, Bust and Echo***.[9] Readers wishing to learn more about this issue will be interested in the article dealing with economic theories of fertility in Part II of the current report.

---

[9] D.K. Foot (1996). ***Boom, Bust and Echo***. MacFarlane Walter and Ross. 245 pages.

MORTALITY

In 1997, 215,669 Canadians died, an increase of 2,810 or 1.3% over the previous year (Table A8, appendix). But it would be a mistake to interpret this increase in absolute numbers as synonymous with an increase in mortality, since the number of deaths is partly due to the aging of the Canadian population. The best way to get a grasp of this is to look at life expectancy.

In relation to 1996, life expectancy at birth was higher in 1997, continuing a long term upward trend. The gains registered in 1997 were 0.33 of a year for males and of a 0.18 year for females (Table A9, appendix). These are sizable if compared to the average gains over the five-year period 1991-1996. The greater increase for males is consistent with trends observed since the late 1970s. It is also worth noting that for all the provinces observed, male gains are greater than female gains. But while the gap in life expectancy between the sexes is narrowing, females may nevertheless still expect to live an average of 5.6 years longer than males (81.4 years and 75.8 years respectively).

An examination of recent changes in life expectancy for each of the provinces (Table 8) shows that some provinces registered a lower life expectancy than in 1996. In particular, this is case for females in some Atlantic provinces. Despite this decrease, there is no cause for alarm, since lower life expectancy in some cases probably results less from a decline in social and health conditions than from circumstantial events (viral or bacterial infections) or the effect of small numbers. Furthermore, during a five-year period, the average annual gains in female life expectancy for those provinces remain positive, and in fact they are slightly higher than the Canadian average. The negative changes in life expectancy between 1996 and 1997 could therefore be due to the random variations associated with low population figures of those provinces.

By contrast, it is the males of New Brunswick and Alberta who show the greatest increase in life expectancy. The same is not true for the women where the gains are highest in Ontario and British Columbia. These gains are especially remarkable since those are the provinces with the highest life expectancies at birth. Some demographers believe that the maximum life expectancy of the human species is roughly 85 years.[10] Therefore, as this limit is approached, gains should be harder to achieve. Recent trends in female mortality in Ontario and British Columbia would appear to contradict these expectations.

---

[10] Fries, S.F. (1983). The Compression of Morbidity: Near or Far? *Milbank Quaterly*. 67(2) : 208-232.
Olshansky, S.J., Carnes, B.A. and C. Cassel (1990). In Search of Mathuselah : Estimating the Upper Limits of Human Longevity. *Science*. 250 : 634-640.

Table 8. Life Expectancy at Birth and Average Annual Change, by Sex and Province, Canada, 1991, 1996 and 1997

Province	1991	1996	1997	Average Annual Change 1996-1997	Average Annual Change 1991-1996
			Males		
Newfoundland	73.74	74.42	74.54	0.12	0.14
Nova Scotia	73.21	74.81	74.99	0.18	0.32
New Brunswick	74.25	74.79	75.23	**0.44**	0.11
Quebec	73.76	74.62	74.91	0.29	0.17
Ontario	75.01	75.90	76.23	0.33	0.18
Manitoba	74.60	75.15	75.45	0.30	0.11
Saskatchewan	75.24	75.36	75.69	0.33	0.02
Alberta	75.05	75.95	76.35	**0.40**	0.18
British Columbia	75.26	76.19	76.48	0.29	0.19
Canada	**74.61**	**75.45**	**75.78**	**0.33**	**0.17**
			Females		
Newfoundland	79.56	80.16	80.04	**-0.12**	0.10
Nova Scotia	80.32	80.60	80.59	**-0.01**	0.05
New Brunswick	80.89	81.23	81.22	**-0.01**	0.06
Quebec	80.92	81.01	81.19	0.18	0.02
Ontario	80.95	81.26	81.50	**0.24**	0.05
Manitoba	80.75	80.53	80.61	0.08	-0.04
Saskatchewan	81.54	81.40	81.45	0.05	-0.02
Alberta	81.18	81.32	81.47	0.15	0.02
British Columbia	81.37	81.84	82.07	**0.23**	0.08
Canada	**80.96**	**81.21**	**81.39**	**0.18**	**0.04**

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and Analysis Section.

Possibly these impressive results are partly due to a population selection effect. More than all others, the populations of Ontario and British Columbia include a sizable contingent of international migrants and Canadians born in another province. It may be assumed that persons who migrate are in above-average health and that their chances of dying are therefore lesser. As to international migrants, they must undergo a medical examination before being admitted to Canada, which may explain their higher life expectancy. What demographers call the "perturbation effect" of migration on the estimation of mortality is greater where migration is more recent; and up to 1998, the 1990s have been characterized by strong immigration favouring those two provinces.

In comparison with the average annual gains for 1991-1996, the gains observed in 1997 are greater for males in all provinces except for Newfoundland and Nova Scotia. Females also increased their gains everywhere except in the three Atlantic provinces. ***In short, for 1997, the gains in life expectancy for Canada as a whole are considerable, in continuation of the long-term trend.***

What are Canadians Dying Of?

Before examining the causes of death, it should be noted that for 1997, mortality rates by cause of death were standardized on the basis of the 1991 population, whereas earlier editions of the ***Report*** used the 1976 population as the standard. The reasons that lay behind this change are of a structural nature. Since the age distribution of the 1976 population bears less and less resemblance to the one taking shape at the dawn of the new millennium, it made good sense to use a more current standard population. While this adjustment altered the data, it has had no significant effect on the interpretation of the results.

The increase in life expectancy in industrialized countries — due in part to the reduction or even eradication the certain causes of death such as cholera or smallpox — has greatly progressed during the 20th century. Advances in medicine and health and social services have succeeded in at least partially eliminating some causes of death. The decline in early childhood diseases during the first two-thirds of the century is an eloquent example. In this regard, ***Canada is one of the top ten countries in the world and the leader in North America, with an infant mortality rate of 5.5 per 1,000, 2 points lower than the United States (7.5 per 1,000)***. Mexico is behind with a rate of 28 per 1,000. Sweden (3.6 per 1,000) and Finland (3.9 per 1,000) have the lowest infant mortality rates in the world. For the past few years, advances against infant mortality have slowed in Canada, which is not necessarily the case with other causes of death.

In recent decades, a more dominant trend has been the decline in fatal consequence of diseases of the circulatory system, especially ischemic heart disease and cerebral-vascular disorders. As Table 9 shows, ***the mortality rates for diseases of the circulatory system and cerebral-vascular disorders declined steeply from 1977 to 1997, falling respectively 41.4% and 53.9% in males***. Nevertheless, since 1976, deaths from tumours and cancer in males rose, reaching a peak of 222.2 per 100,000 in 1988. Today, the mortality rate for tumours and cancer is at its lowest level since 1976 at 200.5 per 100,000. Again looking at the figures for males, the rate for malignant tumours of the respiratory tract has seesawed since 1976. It went from 63.2 per 100,000 in 1976 to a peak of 76.5 per 100,000 in 1988, then fell back to 64.3 per 100,000 in 1997.

With few differences, deaths attributable to ischemic heart disease, diseases of the circulatory system and cerebral-vascular disorders have followed the same pattern over time for males and females, falling respectively by 49.9%, 43.3% and 43.5%. By contrast, ***the increase in tumours and cancer — especially malignant tumours of the respiratory tract*** — has been much greater for females. The tumour and cancer rate went from 165.3 per 100,000 to 170.2 per 100,000 ***in the space of 20 years***, while ***the rate for malignant***

Table 9. Evolution of Mortality from Diseases of the Circulatory System and from Tumours, by Sex, Canada, 1976-1997[1]

Year	Diseases of the Circulatory System[2]	Ischemic Heart Diseases[3]	Cerebro-vascular Diseases[4]	Tumors and Cancers[5]	Malignant Tumors of the Respiratory System[6]
	Males				
1976	483.42	325.55	79.33	203.39	63.24
1977	471.61	318.87	75.58	205.87	65.32
1978	453.26	303.98	72.53	207.88	66.72
1979	436.71	286.05	69.82	210.47	68.28
1980	428.48	280.73	66.36	212.06	70.70
1981	411.99	272.00	63.87	209.92	69.44
1982	402.81	264.74	59.66	213.74	73.33
1983	387.30	253.67	56.18	213.11	74.05
1984	370.19	242.32	54.66	217.52	75.60
1985	361.19	236.15	51.80	217.79	73.55
1986	351.83	227.36	50.11	218.55	74.39
1987	333.96	216.33	48.96	217.48	74.15
1988	325.48	210.16	46.80	222.20	76.49
1989	312.07	198.42	47.22	218.56	75.90
1990	288.48	181.90	45.20	216.10	74.84
1991	281.59	176.31	43.43	216.31	73.84
1992	275.35	171.72	42.36	214.14	72.33
1993	276.86	171.67	44.18	212.61	72.30
1994	265.92	163.69	42.77	211.50	70.40
1995	260.37	158.37	42.52	208.91	67.83
1996	253.51	154.15	40.90	206.30	67.25
1997	244.51	146.68	40.63	200.36	64.27
	Females				
1976	426.87	239.99	103.36	164.50	14.24
1977	412.37	232.56	97.36	165.26	16.01
1978	398.90	226.75	94.34	165.90	17.05
1979	381.56	208.64	90.12	169.24	18.55
1980	380.04	207.20	86.21	167.51	19.48
1981	361.41	197.39	82.89	167.81	20.40
1982	356.35	194.77	79.65	168.20	22.34
1983	339.19	183.88	75.20	168.56	22.55
1984	328.23	180.79	71.13	171.59	25.20
1985	319.47	172.65	69.75	174.92	27.04
1986	315.86	170.83	69.03	174.88	27.16
1987	299.24	161.74	64.54	174.17	28.72
1988	293.75	156.76	64.85	176.05	30.64
1989	280.83	148.58	62.82	173.87	30.54
1990	265.75	141.56	58.32	173.78	31.20
1991	261.09	137.91	57.71	174.73	33.42
1992	253.03	130.83	57.64	173.93	33.20
1993	255.25	130.98	59.42	176.83	35.79
1994	249.94	127.23	57.12	176.87	35.92
1995	244.67	123.98	55.90	173.63	35.64
1996	240.27	120.53	55.22	177.35	37.85
1997	233.43	116.38	54.99	170.12	36.60

[1] Rate per 100,000, standardized on the structure by age and sex of the 1991 population.
[2] Causes 390-459, 9th Revision of the I.C.D.
[3] Causes 410-414, 9th Revision of the I.C.D.
[4] Causes 430-438, 9th Revision of the I.C.D.
[5] Causes 140-239, 9th Revision of the I.C.D.
[6] Causes 160-165, 9th Revision of the I.C.D.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table 10. Deaths Due to HIV (Causes 042-044 in the I.C.D.) by Broad Age Group and Sex, Canada, 1987-1997

Year	0-14	15-29	30-44	45-59	60 +	Total	Variation from the previous year (%)
	Males						
1987	1	85	293	87	22	488	...
1988	2	96	361	126	29	614	25.8
1989	3	124	485	164	21	797	29.8
1990	3	109	575	215	35	937	17.6
1991	3	129	698	233	42	1,105	17.9
1992	4	161	783	305	35	1,288	16.6
1993	7	159	924	330	54	1,474	14.4
1994	4	127	954	350	54	1,489	1.0
1995	9	129	1,041	409	49	1,637	9.9
1996	6	79	754	315	44	1,198	-26.8
1997	3	45	322	144	39	553	-53.8
	Females						
1987	5	7	12	8	5	37	...
1988	3	10	18	7	9	47	27.0
1989	2	10	20	10	12	54	14.9
1990	1	14	19	7	4	45	-16.7
1991	4	15	25	14	7	65	44.4
1992	4	10	38	11	7	70	7.7
1993	2	19	49	13	7	90	28.6
1994	14	16	77	26	6	139	54.4
1995	5	24	68	20	10	127	-8.6
1996	2	24	63	14	5	108	-15.0
1997	2	7	48	12	4	73	-32.4

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

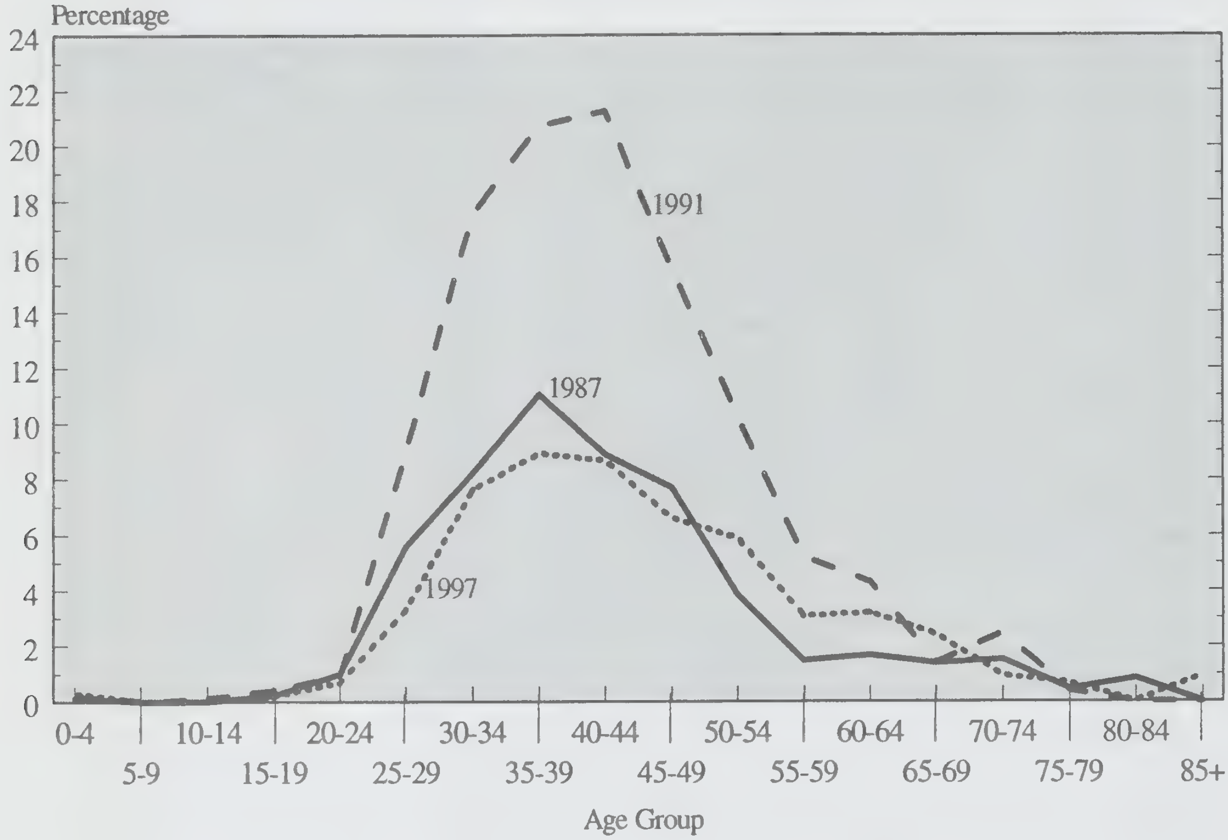
tumours of the respiratory tract more than doubled over the same period. Most of this rapid rise may be attribuable the increase in smoking among women since the 1950s.

The HIV phenomenon

There are now nearly 33.4 million persons infected with HIV worldwide. Again on a worldwide basis, it is estimated that since the start of the epidemic, a total of 13.9 million deaths are attributable to HIV. In 1998, new cases of infection totalled 5.8 million, or roughly 11 new cases every minute, with 95% of them concentrated in developing countries.[11] Of every 100 deaths from HIV, some 80 are in sub-Saharan Africa. In those regions, HIV contributes to the increase in not only in the overall mortality rate, but also in the infant mortality rate. In general, the poorest and less educated segments of the

[11] Estimate of UNAIDS and the World Health Organization for 1998.

Figure 10. Percentage Distribution of HIV Deaths, by Age Group, Males, Canada, 1987, 1991 and 1997



Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

population are the hardest hit. Therefore the major scope of the epidemic has quickly led to vast international education and prevention campaigns that are beginning to have an impact on some population groups.

In Canada, despite a resurgence in rates during the three-year period from 1993 to 1995, ***HIV showed a remarkable slowdown in 1997, especially among males. From 1996 to 1997, the number of deaths attributable to the human immunodeficiency virus fell by 53.8% in males and 32.4% in females***. Since this decline is partly due to the success of efforts to keep patients alive for longer periods, it cannot long continue. The increased use of a "cocktail" of antiretroviral drugs serves to prolong the life of persons who are HIV-positive, with the result that prevalence of the disease has not necessarily declined. However, improvements in detection and treatment have helped to improve the quality of life for persons affected.

As Table 10 shows, one fact remains unchanged in the history of HIV: more males than females are afflicted with this disease. In 1997, the number of deaths attributed to HIV in males was more than seven times greater than the number for females. In general, HIV victims tend to be males aged 25 to 50 (Figure 10).

INTERNATIONAL IMMIGRATION

Compared to the numbers from past years, the 174,143 immigrants admitted by Canada in 1998 seem very few (Table A10, appendix). Indeed, this number is well below those of previous years, since on average, between 1990 and 1997, Canada granted permanent resident status to some 230,000 persons per year. ***Between 1997 and 1998, the number of immigrants to Canada fell by nearly 42,000 persons, the steepest one-year drop since 1958***. This brought the international immigration rate back down to its level of 1987, when the most recent wave of immigration began (Figure 11).

This decrease seems both surprising, in light of recent trends, and unexpected, considering that the annual immigration plan[12] for 1998 anticipated 200,000 to 225,000 immigrants.[13] The number of immigrants admitted is 18% lower than the objective set at the start of the year by Citizenship and Immigration Canada (Table 11). The gap is greater for the refugee and economic classes (-20% and -22% respectively) than for the family class (-9%), for which other admission criteria apply.

A Primarily Asian Decline

In the past few years, nearly two-thirds of immigrants were from Asia. It is therefore not surprising that much of the decrease observed in 1998 is due to a sizable drop in the number of immigrants from that continent. In 1997, there were 139,700 Asian immigrants; in 1998, the number fell by 37,900 to 101,900 persons (Table A10, appendix). While the total number of immigrants decreased by 19% between the two years, the number of Asian immigrants fell more steeply (27%). The proportion of the total represented by immigrants from Asia therefore declined from 65% to 59% between 1997 and 1998.

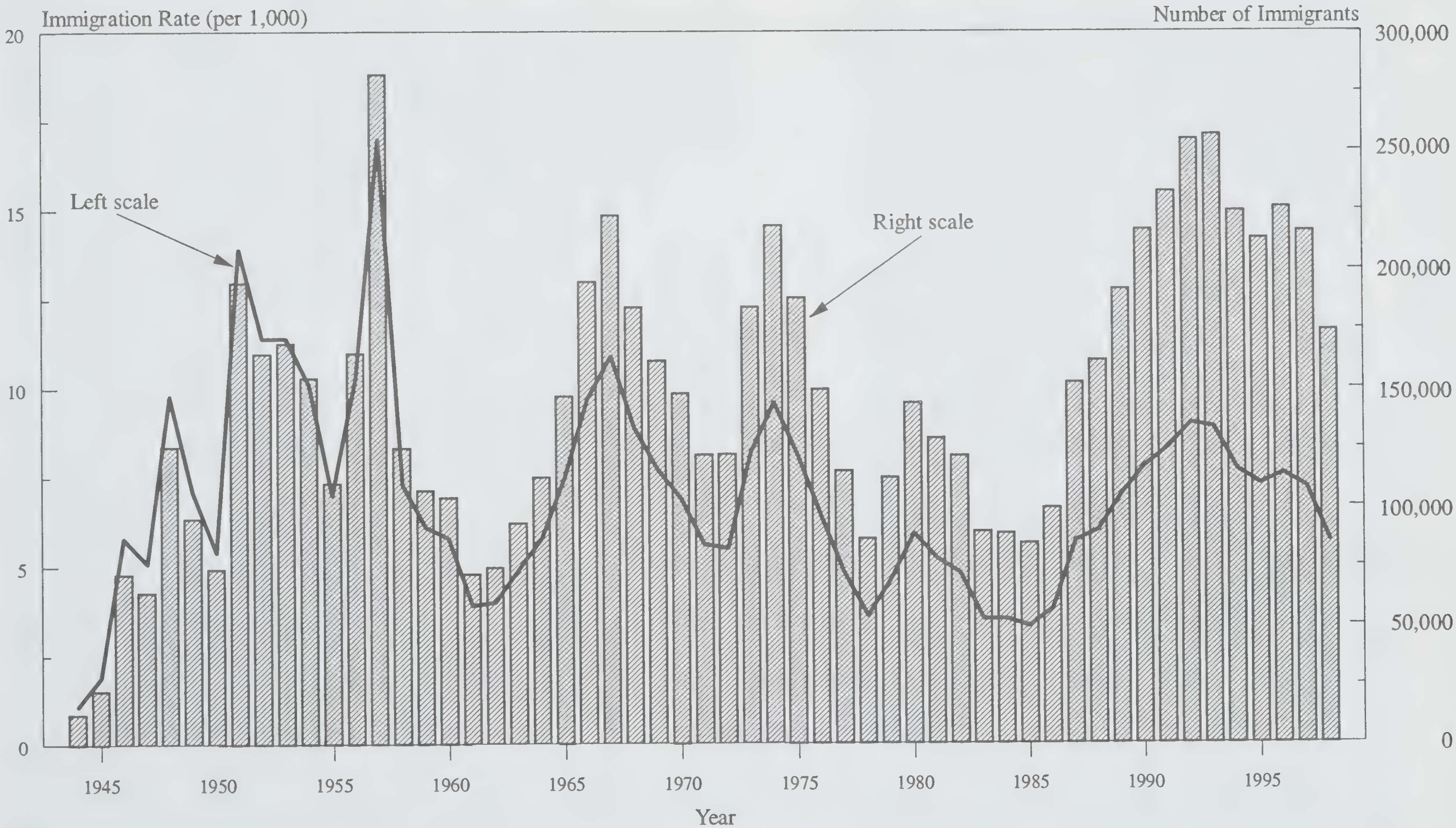
The impact of the enduring financial crisis that has been affecting the "Asian tigers" since 1997 is probably largely responsible for this decrease. An additional factor may be the easing of fears that the People's Republic of China would pursue an interventionist policy following the handover of Hong

---

[12] Under subsection 7(1) of Canada's Immigration Act, the Minister of Citizenship and Immigration must, no later than November 1 of each calendar year, table the immigration plan for the following year. The plan must contain the estimated total number of immigrants (for each class), refugees and other persons who will be admitted to Canada for humanitarian reasons in the coming year.

[13] Citizenship and Immigration Canada distinguish between immigrants and refugees. The annual immigration plan called for a range of 175,900 to 192,700 immigrants and from 24,100 to 32,300 refugees. While the distinction is important from a policy analyst's standpoint, it is not significant for the purposes of the demographic accounts. In order to lighten the text, no distinction will be made here between immigrants and refugees except when analysing classes of immigrants.

Figure 11. Number of Immigrants and Immigration Rate, Canada, 1944-1998



Sources: Employment and Immigration Canada, ***Immigration Statistics*** and after 1980, Citizenship and Immigration Canada, unpublished data.

Table 11. Number of Observed Immigrants and Number Planned by Class According to the Immigration Plan, Canada, 1998

Class	Number Planned	Observed Number		
		Number	Difference[2]	
			Number	Percentage
Family	53,500 - 58,300	50,872	-5,028	-9.0
Economic	115,900 - 127,900	94,954	-26,946	-22.1
Other[1]	6,500	5,651	-849	-13.1
Total immigrants	175,900 - 192,700	151,477	-32,823	-17.8
Total refugees	24,100 - 32,300	22,666	-5,534	-19.6
Total	200,000 - 225,000	174,143	-38,357	-18.1

[1] Includes live-in caregivers, special categories and provincial/territorial nominees.
[2] The difference is calculated using the average number planned for each class.
Source: Citizenship and Immigration Canada, ***A Stronger Canada: 1998 Annual Immigration Plan***, catalogue no. Ci1-1998.

Kong to China on July 1, 1997. Over several years, the number of immigrants from Hong Kong has plummeted. In the space of one year (from 1997 to 1998), arrivals from Hong Kong dropped by 64%, and there were nearly 11,500 fewer Hong Kong residents in the 1998 contingent of immigrants compared to the 1997 contingent. ***Whereas Hong Kong residents were the largest group from 1992 to 1995, only 6,300 of them settled in Canada in 1998; four years earlier, 33,700 had obtained permanent resident status***.

The numbers of immigrants from Taiwan and India have also fallen remarkably, with decreases of respectively 46% (-5,900) and 23% (-4,900) for 1998. Pakistan, with a 31% decrease in the number of its nationals immigrating to Canada, has also greatly contributed to the decline in Asian immigration. The sudden drop in Pakistani emigrants to Canada (-3,800), contrasts with the increase (+3,600) in the previous year (Table 12).

In a context of lower immigration, some source countries nevertheless managed to increase their contribution slightly in 1998. The main ones are South Korea (+765), France (+673), Russia (+479) and Algeria (+441). The number of immigrants from the former socialist republics (including Russia) is rising sharply; with 11,900 immigrants, this region appears to be the third largest contributor, after China (22,600) and India (16,800). Also noteworthy is a slight upturn in the number of immigrants from Bosnia-Herzegovina. During the conflict from 1992 to 1995 between Serbs, Croats and Bosnians, the number of Bosnians arriving in Canada reached unprecedented levels. More specifically, nearly 4,700 Bosnians chose Canada as their adopted country in 1994, with the numbers falling to just under 2,200 in 1997 and 2,500 in 1998.

Table 12. Countries of Birth from Which more than 2,000 Immigrants Came to Canada in 1996, 1997 and 1998

Country of Birth	1996	1997	1998	Difference between 1996 et 1997	Difference between 1997 et 1998
AFRICA					
Algeria	2,042	1,798	2,239	-244	441
Egypt	2,375	2,043	1,297	-332	-746
AMERICA					
Guyana	2,392	1,841	1,272	-551	-569
Jamaica	3,309	2,870	2,252	-439	-618
Trinidad and Tobago	2,205	1,760	1,196	-445	-564
United States	5,051	4,402	4,140	-649	-262
ASIA					
Afghanistan	2,002	2,308	2,054	306	-254
Bangladesh	2,754	3,273	2,099	519	-1,174
China	24,986	24,750	**22,622**	-236	**-2,128**
Hong Kong [1]	24,143	17,805	**6,343**	-6,338	**-11,462**
India	23,388	21,711	**16,814**	-1,677	**-4,897**
Iran	6,260	7,884	6,996	1,624	-888
Iraq	2,771	2,574	1,862	-197	-712
Pakistan	8,556	12,179	8,396	3,623	-3,783
Philippines	13,626	11,414	8,499	-2,212	-2,915
South Korea	3,251	4,110	4,875	859	765
Sri Lanka	6,443	5,342	3,535	-1,101	-1,807
Taiwan	12,754	12,784	**6,930**	30	**-5,854**
Vietnam	2,706	1,998	1,821	-708	-177
EUROPE					
France	2,438	2,313	2,986	-125	673
Great Britain	4,381	3,923	3,260	-458	-663
Poland	2,167	1,793	1,507	-374	-286
Romania	3,952	4,045	3,058	93	-987
Ex USSR	8,950	10,795	**11,860**	1,845	**1,065**
Russia	3,181	4,236	4,715	1,055	479
Ukraine	2,680	2,648	2,731	-32	83
Others	3,089	3,911	4,414	822	503
Ex Yugoslavia	8,444	6,786	6,425	-1,658	-361
Bosnia-Hercegovina	2,466	2,204	2,469	-262	265
Others	5,978	4,582	3,956	-1,396	-626

[1] Includes Hong Kong SAR (Special Administrative Region), since July 1, 1997.
Note: Data is preliminary as of July 12, 1999.
Source: Citizenship and Immigration Canada, unpublished data.

Even though the number of immigrants from Asia has declined, they are still the largest immigrant contingent, with nearly 102,000 individuals, compared to only 37,000 individuals from Europe. Together, the other parts of the world contributed 35,100 immigrants in 1998, with many of them coming from Africa (14,400).

Asia was not always the main source of immigrants admitted to Canada. Thirty years ago, Europe played this role. Until the end of the 1960s, the

great majority of immigrants came from either that continent or the United States. From 1964 to 1968, for example, two European countries, the United Kingdom (25%) and Italy (16%) dominated Canadian immigration much more than China, Hong Kong and India do today, since four immigrants in ten were natives of one of those two countries (Figure 12).

During the second half of the 20th century, following major changes to the Immigration Act, the geographic centre of Canadian immigration shifted from Europe to Southeast Asia. For a long time, certain countries, especially those in Asia, were little favoured. Early in the century, a head tax (of up to $500) was imposed on Chinese immigrants, and the Chinese Immigration Act (in force from 1923 to 1947) prevented Asian immigrants from coming to Canada. It was not until 1962 that these selection processes were abolished, and it was then that the makeup of immigration began to change. Today (1994-1998), without dominating the makeup of Canadian immigration as much as the British and Italians did in the early 1960s, persons from China (11%), Hong Kong (10%) and India (10%) are the largest contingents. They alone constitute more than 30% of the total.

Greater Decrease in Ontario and British Columbia

Ontario has always held considerable attraction for immigrants of all origins. Since the early 1980s, it has received 139,000 Hong Kong-born immigrants, 135,000 Chinese, 135,000 Indians and 100,000 Filipinos, to name only the main supplier countries. British Columbia is also favoured by Asian immigration, but the numbers that it receives are much more modest. Quebec, the main destination for Francophones,[14] stands out for having received, since 1980, mainly immigrants from Haiti (40,000), Lebanon (39,000) and France (34,000).

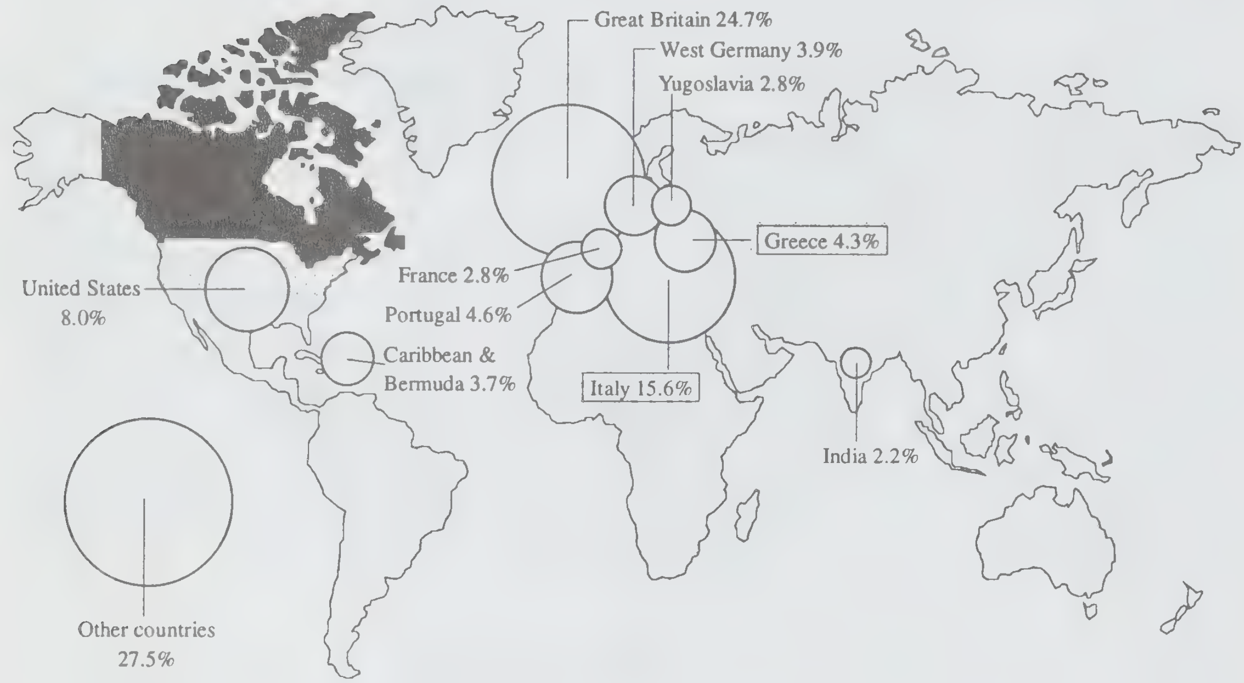
The drop in immigration in 1998 affects all provinces, but the impact is greater on the provinces that attracted the largest number of Asian immigrants. Ontario and British Columbia, with decreases of respectively 21% and 25% in the number of immigrants received, experienced larger declines than Canada as a whole (19%). However, despite a drop of 25,300 in its immigrant numbers, Ontario is still the province most selected by immigrants, and it continues to be the destination of more than half of them. British Columbia, with a decrease of 11,800 immigrants, has in relative terms been harder hit than Ontario, but it nevertheless continues to be the second-ranking destination, with nearly 21% of the total (Table 13).

While the two provinces that receive the most immigrants saw their contingents fall by more than the average, other were necessarily less affected by the drop in immigration in 1998. This was especially the case with Quebec,

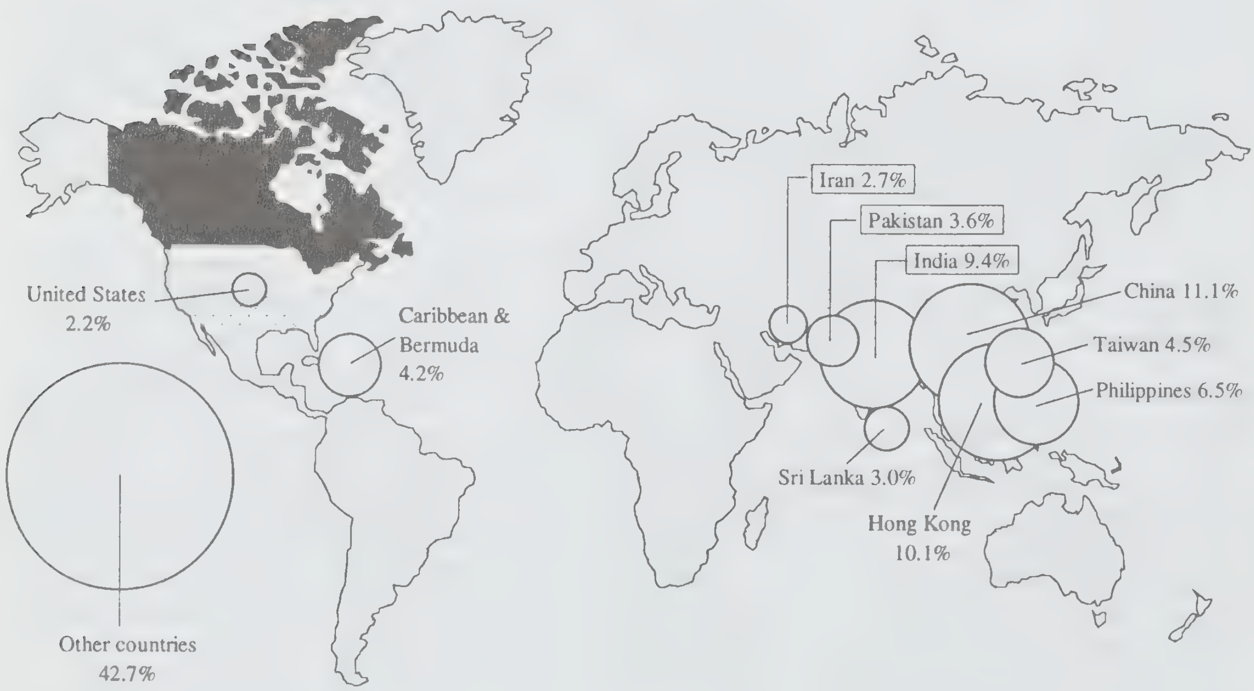
[14] Immigrants subject to the point system (economic class) obtain extra points in Quebec for knowledge of French.

Figure 12. Place of Birth of Landed Immigrants in Canada According to the 10 Main Places of Birth[1], 1964-1968 and 1994-1998

1964-1968



1994-1998



[1] The place of birth is the country of birth according to the territorial divisions of 1964-1968 and of 1994-1998.

Sources: 1964-1968: Department of Manpower and Immigration, Canada Immigration Division, *Immigration Statistics*. 1994-1998: Citizenship and Immigration Canada, unpublished data.

where the 26,400 immigrants received this year represented a decrease of only 5% from the previous year. Historically, between 15% and 20% of all immigrants to Canada choose Quebec, but since 1993, Quebec has managed to attract no more than 12% or 13% of Canadian immigrants. ***Because of the decrease in immigration, Quebec succeeded for the first time in five years in attracting at least 15% of immigrants in 1998***. Alberta was also less affected than other provinces by the drop in immigration. The other provinces registered negligible changes, precisely because they tend to attract fewer immigrants.

Greater Drop in Numbers of Economic Immigrants

The globalization of markets has altered the demand for human capital. This has clearly increased the rivalry between countries to attract highly skilled labour. Despite Canada's efforts to bring in more economic migrants,[15] it appears that in this regard, 1998 will turn not to have met expectations. Figures on classes of immigrants[16] ***show a decrease in entries for all three classes, but a larger decrease for those in the economic class*** (Table 14). ***In 1998, Canada received fewer than 95,000 economic immigrants, down 24% from the previous year***. Admittedly, the 125,500 economic immigrants admitted in 1997 represented an all-time high for this class. And there were also decreases, albeit smaller ones, in the "family" and "refugee" classes last year. These dropped from 60,000 to 50,900 arrivals (-15%) and from 24,100 to 22,700 arrivals (-6%) respectively. ***The economic class is still the largest accounts for 55% of immigrants***. Of the three main provinces of destination, British Columbia is still the one with the largest share of its immigrants in the economic class, namely 59% of the total, compared to 55% for Ontario and 47% for Quebec (Table 15).

Update on International Adoption

International adoption grew considerably during the 1990s. In 1998, 2,223 children were adopted abroad, compared to only 320 in 1991. This large increase is mainly due to the boom in adoption of females from China, since adopted children born in that country account for 41% of all children adopted abroad, and 99% of them are females. Despite a long and complex process that can result in a wait of more than a year, China has become a major source for families wishing to adopt a child (Table 16). Between 1991

---

[15] ***Not Just Numbers: A Canadian Framework for Future Immigration***. Minister of Public Works and Government Services, Canada, 1997.

[16] The Canadian Immigration Act passed in 1976 defines three classes of immigrants. Immigrants in the "economic class" are subject to the point system and must meet certain admission criteria. Neither landed immigrants in the "family class," consisting of close relatives of immigrants, nor refugees are subject to the point system.

Table 13. Percentage Distribution of Landed Immigrants by Intended Province of Destination, Canada, 1971-1998

Province	Year													
	1971	1981	1986	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Newfoundland	0.7	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Prince Edward Island	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nova Scotia	1.5	1.1	1.1	0.8	0.8	0.7	0.6	0.9	1.2	1.5	1.7	1.4	1.3	1.2
New Brunswick	0.9	0.8	0.6	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Quebec	15.8	16.4	19.6	15.8	17.7	18.9	22.3	19.1	17.5	12.5	12.8	13.2	12.8	15.1
Ontario	52.8	42.7	50.0	55.0	54.6	52.5	51.4	54.5	52.4	52.4	54.4	52.9	54.6	53.2
Manitoba	4.3	4.2	3.8	3.1	3.2	3.1	2.4	2.0	1.9	1.8	1.7	1.7	1.7	1.7
Saskatchewan	1.2	1.9	1.9	1.4	1.1	1.1	1.1	1.0	0.9	1.0	0.9	0.8	0.8	0.9
Alberta	7.1	15.0	9.7	8.7	8.4	8.7	7.3	7.0	7.2	8.0	6.7	6.1	6.0	6.4
British Columbia	15.5	17.1	12.6	14.3	13.2	13.3	13.9	14.5	17.8	21.9	20.9	23.0	22.0	20.6
Yukon and Northwest Territories[1]	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Unknown	0.0	0.3	0.1	0.0	0.0	0.9	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0
Total Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	121,717	128,793	99,339	161,534	191,505	216,418	232,763	254,845	256,759	224,378	212,856	226,050	216,045	174,143

[1] Includes Nunavut.

Note: Preliminary data as of July 12, 1999.

Sources: Employment and Immigration Canada, ***Immigration Statistics*** and after 1980, Citizenship and Immigration Canada, unpublished data.

Table 14. Immigrants to Canada by Class, 1980-1998

Year	Family	Economic	Refugees	Others [1]	Total
	Number				
1980	49,440	46,431	40,658	6,969	143,498
1981	50,534	56,702	15,062	6,495	128,793
1982	50,186	51,148	17,002	2,994	121,330
1983	48,987	24,186	14,064	2,140	89,377
1984	44,593	26,095	15,556	2,353	88,597
1985	39,356	26,114	16,768	2,102	84,340
1986	42,465	35,840	19,199	1,835	99,339
1987	53,799	74,096	21,465	2,666	152,026
1988	51,398	80,228	26,736	3,172	161,534
1989	60,937	90,138	36,860	3,570	191,505
1990	74,366	95,636	36,100	10,316	216,418
1991	85,943	80,001	35,880	30,939	232,763
1992	96,791	82,280	37,022	38,752	254,845
1993	110,436	95,653	24,898	25,772	256,759
1994	93,715	96,561	19,750	14,352	224,378
1995	77,227	100,898	27,761	6,970	212,856
1996	68,319	120,279	28,345	9,107	226,050
1997	59,959	125,491	24,124	6,471	216,045
1998	50,872	94,954	22,666	5,651	174,143
	Percentage				
1980	34.5	32.4	28.3	4.9	100.0
1981	39.2	44.0	11.7	5.0	100.0
1982	41.4	42.2	14.0	2.5	100.0
1983	54.8	27.1	15.7	2.4	100.0
1984	50.3	29.5	17.6	2.7	100.0
1985	46.7	31.0	19.9	2.5	100.0
1986	42.7	36.1	19.3	1.8	100.0
1987	35.4	48.7	14.1	1.8	100.0
1988	31.8	49.7	16.6	2.0	100.0
1989	31.8	47.1	19.2	1.9	100.0
1990	34.4	44.2	16.7	4.8	100.0
1991	36.9	34.4	15.4	13.3	100.0
1992	38.0	32.3	14.5	15.2	100.0
1993	43.0	37.3	9.7	10.0	100.0
1994	41.8	43.0	8.8	6.4	100.0
1995	36.3	47.4	13.0	3.3	100.0
1996	30.2	53.2	12.5	4.0	100.0
1997	27.8	58.1	11.2	3.0	100.0
1998	29.2	54.5	13.0	3.2	100.0

[1] Includes live-in caregivers, deferred removal order and post determination refugees, retirees, provincial/territorial nominees, the backlog and the non stated.

Note: Preliminary data as of July 12, 1999.

Source: Citizenship and Immigration Canada, unpublished data.

Table 15. Number of Immigrants and Distribution (in Percent) by Province of Destination and Class, Canada, 1998

Province	Family	Economic[1]	Refugees	Others	Total
	Number				
Newfoundland	72	219	116	11	418
Prince Edward Island	11	54	58	5	128
Nova Scotia	234	1,601	235	6	2,076
New Brunswick	158	425	162	13	758
Quebec	6,897	12,463	6,190	824	26,374
Ontario	27,244	51,251	11,450	2,684	92,629
Manitoba	942	1,362	649	48	3,001
Saskatchewan	391	581	528	75	1,575
Alberta	3,760	5,792	1,266	372	11,190
British Columbia	11,090	21,103	2,007	1,604	35,804
Yukon	28	32	-	1	61
Northwest Territories[2]	34	27	1	4	66
Not Stated	11	44	4	4	63
Total	50,872	94,954	22,666	5,651	174,143
	Distribution by Province (%)				
Newfoundland	0.1	0.2	0.5	0.2	0.2
Prince Edward Island	0.0	0.1	0.3	0.1	0.1
Nova Scotia	0.5	1.7	1.0	0.1	1.2
New Brunswick	0.3	0.4	0.7	0.2	0.4
Quebec	13.6	13.1	27.3	14.6	15.1
Ontario	53.6	54.0	50.5	47.5	53.2
Manitoba	1.9	1.4	2.9	0.8	1.7
Saskatchewan	0.8	0.6	2.3	1.3	0.9
Alberta	7.4	6.1	5.6	6.6	6.4
British Columbia	21.8	22.2	8.9	28.4	20.6
Yukon	0.1	0.0	-	0.0	0.0
Northwest Territories[2]	0.1	0.0	0.0	0.1	0.0
Not Stated	0.0	0.0	0.0	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0
	Distribution by Class (%)				
Newfoundland	17.2	52.4	27.8	2.6	100.0
Prince Edward Island	8.6	42.2	45.3	3.9	100.0
Nova Scotia	11.3	77.1	11.3	0.3	100.0
New Brunswick	20.8	56.1	21.4	1.7	100.0
Quebec	26.2	47.3	23.5	3.1	100.0
Ontario	29.4	55.3	12.4	2.9	100.0
Manitoba	31.4	45.4	21.6	1.6	100.0
Saskatchewan	24.8	36.9	33.5	4.8	100.0
Alberta	33.6	51.8	11.3	3.3	100.0
British Columbia	31.0	58.9	5.6	4.5	100.0
Yukon	45.9	52.5	-	1.6	100.0
Northwest Territories[2]	51.5	40.9	1.5	6.1	100.0
Not Stated	17.5	69.8	6.3	6.3	100.0
Total	29.2	54.5	13.0	3.2	100.0

[1] Includes business and qualified workers.
[2] Includes Nunavut.
Source: Citizenship and Immigration Canada, unpublished data.

and 1998, the number of Chinese adoptees went from 36 to 902. Apart from China, the main countries from which children are adopted are India, with 177 children (8%), Russia, with 160 children (7%), and Haiti, with 155 children (7%).

The phenomenon of international adoption is much more widespread in the three most populous provinces — Quebec, Ontario and British Columbia — than elsewhere in Canada. Quebec families in particular adopted 920 children from foreign countries, representing more than 40% of the total. Ontario families, while more numerous, adopted somewhat fewer, namely 820 children. Quebec is especially noteworthy with respect to the adoption of children born in China. To grasp the scope of the phenomenon in Quebec, it is useful to look at the number of children adopted abroad in relation to the number of births for each region of Canada. That ratio is nearly twice as high for Quebec (12.2 children adopted abroad per 1,000 births) as for Ontario and British Columbia, which vie for second place with ratios only half as high.

While the phenomenon of international adoption has been growing since the early 1990s, it nevertheless accounts for only a minuscule portion of total immigration. In fact, of all immigrants received in Canada in 1998, only 1.3% were children adopted abroad.

Conclusion

In 1998, the number of international immigrants fell sharply, registering its steepest drop in forty years. This decrease in the number of immigrants

Table 16. Number of Children Adopted from Outside Canada According to the Country of Birth and the Region of Destination, Canada, 1998

Country	Atlantic	Quebec	Ontario	Prairies	British Columbia	Total[1]	Percentage
China	24	497	289	39	52	902	40.6
India	0	5	93	22	57	177	8.0
Russia	8	51	81	4	16	160	7.2
Haiti	3	111	12	8	21	155	7.0
Roumania	1	43	22	23	2	91	4.1
Jamaica	0	0	81	2	2	85	3.8
Phillipines	4	8	32	18	17	80	3.6
Vietnam	1	61	12	2	3	79	3.6
United States	1	2	33	8	34	78	3.5
Guatemala	1	14	39	3	13	70	3.1
Others	2	128	127	29	60	346	15.6
Total	45	920	821	158	277	2,223	100.0
Percentage	2.0	41.4	36.9	7.1	12.5	100.0	-
International Adoption for 1,000 Births	1.9	12.2	6.1	2.4	6.2	6.4	-

[1] Total includes Yukon, Northwest Territories and Nunavut.
Source: Citizenship and Immigration Canada, unpublished data.

affected all provinces, but the greatest impact was on the two provinces most favoured by immigration: Ontario and British Columbia. It also affected all classes of immigrants, but especially the economic class, considered a priority group in the immigration plan. Whereas Canada expected to admit between 115,900 and 127,900 economic immigrants, it admitted only 95,000. While the number of immigrants from all regions of origin was down, the number of Asians dropped much more sharply. In fact, all these findings are interrelated, since Ontario and British Columbia traditionally receive more Asian immigrants than the other provinces as well as a large proportion of immigrants in the economic class. Furthermore, most Asian immigrants, and more especially those from Hong Kong, belong to the economic class.

Preliminary data for 1999 suggest that Canada may have some difficulties achieving its immigration objectives. The annual immigration plan for 1999 maintains the objectives of the previous year and situates the expected level of immigration at between 200,000 and 225,000 persons.[17] The data available for the first five months of 1999 are comparable to those for the first five months of 1998, suggesting that the number of immigrants may be similar to the figure for 1998, that is, approximately 175,000 persons.

---

[17] Citizenship and Immigration Canada (1998). ***Canada – A Welcoming Land***. 1999 Annual Immigration Plan. Catalogue no. Ci1-1999, tabled in October 1998.

INTERNAL MIGRATION

A comparison (Table 17) of 1997 interprovincial migration balances with those of the recent past brings out three major trends that could well characterize Canada's migration system in the last five years of the century:

1. in Eastern Canada and on the Prairies except for Alberta, a continuation or indeed an acceleration of migration losses;
2. in Central Canada, a reversal of Ontario's migration balance, which has become positive for the first time since 1988; and
3. in Western Canada, the consolidation of a recent flow favouring Alberta at the expense of British Columbia.

Quebec and Newfoundland, the two provinces with the largest negative balances every year since 1994, are also the most representative of the first of these trends. ***Quebec's migration losses have exceeded 10,000 persons per year since 1994, and according to preliminary estimates they reached 17,800 in 1997***. Of course, Quebec is traditionally on the losing end in its migration exchanges with other provinces, but the recent losses are larger than those of the previous two five-year periods. Between 1985 and 1993, Quebec had only one year with a migration deficit exceeding 10,000. The average annual loss during the five-year period 1985-1989 was only 6,400 persons per year. What is happening is definitely not an exodus, and the situation is much less worrisome than in 1970 or 1977, but it is certainly a source of concern for this province whose demographic weight within Canada is steadily declining.

In Newfoundland, all things considered, the situation is much more serious. In 1997, this relatively unpopulous province (with a population of 554,400 on July 1, 1997) appears to have lost 9,300 persons in its exchanges with other provinces. Whereas the population of Newfoundland is one-thirteenth that of Quebec, its losses were half those of the latter province. ***The number of out-migrants was especially large, reaching 17,400 for the year*** (Table 19). ***This reflects an interprovincial out-migration rate of more than 3%, a slight increase over the previous year*** (Table A1, appendix), ***thus continuing an upward trend now in its a fifth straight year***. In Newfoundland, as elsewhere, young people entering the labour market show the greatest propensity to migrate. The construction of the Hibernia drilling platform and its subsequent operation, along with financial assistance programs for fishermen affected by the moratorium on fishing in the Grand Banks off Newfoundland, were not enough to prevent the increasing exodus of this region's population. While a reversal of the migration trend seems unlikely in the short run, the situation can hardly worsen, since the population at risk of migrating is diminishing year after

Table 17. Net Migration for Provinces and Territories, 1972-1997

Year	New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	Total Number of Interprovincial Migrants
1972	-189	858	2,845	241	-19,891	8,227	-7,735	-17,296	6,538	24,927	1,475	375,184
1973	-2,510	478	2,107	2,841	-14,730	-5,275	-2,200	-13,261	2,698	30,537	-685	433,992
1974	-618	1,386	1,576	4,192	-11,852	-22,163	-5,400	-4,835	14,810	22,655	249	421,336
1975	915	814	4,454	7,572	-12,340	-25,057	-4,134	6,555	23,463	-2,864	622	385,330
1976	-2,732	309	361	1,640	-20,801	-10,508	-3,655	3,819	34,215	-1,490	-1,158	376,970
1977	-4,009	614	-1,277	-886	-46,536	8,596	-3,789	384	32,344	15,507	-948	366,918
1978	-3,540	25	-109	-1,644	-33,424	415	-9,557	-3,701	31,987	20,698	-1,150	348,929
1979	-4,217	-225	-1,840	-2,219	-30,025	-15,317	-13,806	-3,510	39,212	33,241	-1,294	370,862
1980	-3,082	-1,082	-2,494	-4,165	-24,283	-34,919	-11,342	-4,382	46,933	40,165	-1,349	372,167
1981	-6,238	-783	-2,465	-4,766	-22,549	-19,665	-3,621	-520	40,243	21,565	-1,201	380,041
1982	261	-6	1,591	2,183	-28,169	19,614	1,498	1,743	3,961	-2,019	-657	322,634
1983	-1,092	799	3,861	2,296	-19,080	32,825	950	2,501	-26,246	4,029	-843	285,599
1984	-3,585	524	2,963	812	-10,943	36,691	-49	733	-30,591	3,505	-60	273,323
1985	-5,019	-13	-234	-1,559	-6,023	33,414	-1,755	-5,014	-9,568	-3,199	-1,030	281,275
1986	-4,682	-493	-739	-2,897	-3,020	42,916	-3,039	-7,020	-20,293	910	-1,643	302,352
1987	-4,374	301	-2,183	-1,762	-7,410	40,278	-4,751	-9,043	-27,595	17,618	-1,079	318,890
1988	-2,154	424	71	-1,215	-7,003	14,898	-8,584	-16,338	-5,535	25,865	-429	323,685
1989	-2,606	-102	572	-21	-8,379	-1,205	-10,004	-18,589	3,366	37,367	-399	347,990
1990	-1,137	-273	-106	1,014	-9,567	-15,117	-8,613	-15,928	11,055	38,704	-32	332,637
1991	-1,084	-415	1,039	-79	-13,047	-9,978	-7,581	-9,499	5,511	34,572	561	315,420
1992	-2,563	232	355	-1,087	-9,785	-13,530	-6,417	-7,727	1,030	39,578	-86	309,261
1993	-3,397	532	-1,143	-492	-7,426	-12,771	-5,206	-4,543	-2,355	37,595	-794	283,297
1994	-6,204	694	-2,694	-505	-10,252	-4,527	-4,010	-3,958	-2,684	34,449	-309	286,370
1995	-6,566	368	-1,972	-931	-10,248	-1,764	-3,344	-3,190	4,251	23,414	-18	286,259
1996	-7,945	401	-1,064	-910	-15,358	-1,706	-3,738	-1,871	15,069	17,798	-676	283,999
1997	-9,279	-466	-3,355	-1,688	-17,789	5,149	-7,008	-3,288	33,834	5,554	-1,664	315,364
Total	-78,367	5,367	3,475	-2,347	-402,141	44,372	-129,882	-134,490	191,819	515,127	-12,933	8,700,084

Note: Nunavut is included in the Northwest Territories.

Source: Statistics Canada, Demography Division, Population Estimates Section.

Table 18. Annual Number of Interprovincial Migrants According to Revenue Canada Tax Files

January to December 1996

Number of Migrants: 283,999

Province of Origin	Province of Destination											
	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]
Newfoundland	...	294	1,861	694	304	5,210	288	130	3,446	1,791	67	428
Prince Edward Island	161	...	610	338	110	561	34	38	241	212	7	14
Nova Scotia	1,070	667	...	2,331	1,029	6,457	522	217	2,441	2,147	71	145
New Brunswick	401	498	2,172	...	1,699	3,789	292	155	1,763	1,113	—	95
Quebec	165	126	1,045	2,015	...	22,733	606	249	3,716	5,353	78	120
Ontario	2,971	728	5,797	3,494	13,423	...	4,289	2,003	13,231	22,121	158	476
Manitoba	112	58	490	239	503	4,771	...	2,491	4,967	4,273	70	125
Saskatchewan	22	23	266	111	319	2,192	2,296	...	9,552	3,626	91	155
Alberta	748	120	1,560	877	1,202	8,926	3,027	7,677	...	20,752	482	765
British Columbia	751	200	2,036	901	2,077	11,723	2,736	3,413	19,927	...	749	417
Yukon	22	—	16	15	30	148	41	69	477	824	...	49
Northwest Territories[1]	145	13	180	52	152	475	230	340	1,444	516	133	...
In	6,568	2,727	16,033	11,067	20,848	66,985	14,361	16,782	61,205	62,728	1,906	2,789
Out	14,513	2,326	17,097	11,977	36,206	68,691	18,099	18,653	46,136	44,930	1,691	3,680
Net Migration	-7,945	401	-1,064	-910	-15,358	-1,706	-3,738	-1,871	15,069	17,798	215	-891

[1] Nunavut included.

Source: Statistics Canada, Demography Division, Population Estimates Section.

Table 19. Annual Number of Interprovincial Migrants According to Revenue Canada Tax and Child Tax Credit Files

January to December 1997

Number of Migrants: 315,364

Province of Origin	Province of Destination											
	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]
Newfoundland	...	191	2,114	836	359	5,989	252	292	5,639	1,391	69	270
Prince Edward Island	169	...	649	461	86	802	70	36	619	192	3	10
Nova Scotia	1,323	613	...	2,692	1,056	6,994	458	377	3,910	2,548	37	104
New Brunswick	619	421	2,768	...	2,039	4,542	278	183	2,723	1,335	17	21
Quebec	267	114	1,100	2,742	...	26,418	673	304	4,024	5,316	46	129
Ontario	3,347	814	5,856	4,112	15,100	...	4,601	1,945	14,451	19,966	180	505
Manitoba	175	58	461	305	489	5,157	...	3,168	6,375	4,753	66	325
Saskatchewan	110	7	200	77	259	1,911	2,055	...	12,431	3,715	70	219
Alberta	999	185	1,701	1,006	1,240	9,589	2,890	7,871	...	18,642	361	901
British Columbia	908	176	1,650	857	2,507	13,974	2,789	3,196	26,565	...	792	321
Yukon	45	8	39	35	58	173	42	91	730	908	...	63
Northwest Territories[1]	161	44	219	135	151	477	216	303	1,752	523	118	...
In	8,123	2,631	16,757	13,258	23,344	76,026	14,324	17,766	79,219	59,289	1,759	2,868
Out	17,402	3,097	20,112	14,946	41,133	70,877	21,332	21,054	45,385	53,735	2,192	4,099
Net Migration	-9,279	-466	-3,355	-1,688	-17,789	5,149	-7,008	-3,288	33,834	5,554	-433	-1,231

[1] Nunavut included.

Source: Statistics Canada, Demography Division, Population Estimates Section.

Table 20. Population Ratio by Generation for Newfoundland and British Columbia, 1981-1998

Year	Newfoundland			British Columbia		
	Population Aged 15, 10 Years Earlier	Population Aged 25	Population Ratio	Population Aged 15, 10 Years Earlier	Population Aged 25	Population Ratio
1981	6,500	5,100	0.79	22,400	26,900	1.20
1982	6,400	5,000	0.78	22,400	27,100	1.21
1983	6,400	5,000	0.78	23,600	27,500	1.17
1984	6,600	5,000	0.77	24,100	27,600	1.14
1985	6,800	5,100	0.75	25,400	27,800	1.09
1986	7,000	5,000	0.72	25,500	27,400	1.08
1987	6,600	5,000	0.76	24,900	27,500	1.11
1988	6,600	4,900	0.75	25,500	28,200	1.11
1989	6,900	5,000	0.72	25,000	27,800	1.12
1990	7,000	5,000	0.71	24,200	27,100	1.12
1991	6,800	4,900	0.72	22,600	25,600	1.13
1992	6,300	4,700	0.75	21,600	25,400	1.17
1993	6,300	4,700	0.75	21,500	26,400	1.23
1994	6,300	4,600	0.73	22,300	28,100	1.26
1995	6,200	4,400	0.71	22,900	29,600	1.29
1996	6,200	4,300	0.69	22,400	30,100	1.34
1997	6,100	4,200	0.69	20,800	28,300	1.36
1998	5,800	3,900	**0.67**	20,600	27,500	**1.34**

Source: Statistics Canada, Demography Division, Population Estimates Section.

year. The other Atlantic provinces also have negative migration balances for 1997, but their out-migration rates are roughly 2% and are therefore comparable to those observed in other Canadian provinces.

A quick calculation serves to illustrate the effect of internal migration on particular segments of the Newfoundland population. Looking at different recent cohorts, Table 20 shows the ratio of the size of each cohort at age 15 to its size ten years later, when its members have reached age 25. The situation in Newfoundland is compared to that of British Columbia, which experienced strong population growth over the period. These ratios reflect not only from the effect of internal and international migration, but also mortality. Newfoundland is relatively little affected by international migration, and mortality is relatively low at these ages, and hence what this indicator primarily shows is the effect of young people's strong propensity to leave the province. The ongoing deterioration of the demographic situation since the start of the decade may be seen in the change in the cohort size ratios over time. These ratios are all less than 1! Standing at roughly 0.80 at the start of the period analysed, the ratio hovers around 0.75 until 1993, then falls steeply to 0.67 for the last cohort studied. Expressed in words, ***the latter ratio means that on average, for each 100 persons that an individual might know when completing high school, a third would have left the province ten years later***. For British

Columbia, by contrast, the corresponding ratios are all greater than 1, reflecting the strong growth resulting from largely positive balances for both internal and international migration.

After eight years of negative balances, in 1997 Ontario showed its first positive balance in its exchanges with the other provinces. The gain of some 5,100 persons resulted from a sizable increase in the number of in-migrants, with the number of out-migrants remaining stable. A detailed analysis of that province's inflows and outflows does not, however, indicate a new trend. The two main migration flows that contributed to this reversal are, in relation to the previous year (Table 18), an increase in the number of migrants arriving from Quebec and a decrease in the number of migrants departing for British Columbia, with all other flows to or from other provinces exhibiting only minor changes. It appears, then, that for the present, the reversal of Ontario's migration balance is due to phenomena external to the province: the decline in the attractiveness of British Columbia as a result of the economic slowdown in that province, which was more affected than the others by the Asian crisis, and the increase in outflows from Quebec to Ontario. Out-migration to British Columbia could increase with a recovery of that province's economy. The growing differences in taxation could continue to favour the movement of Quebecers to Ontario. It is therefore not certain that this reversal heralds the beginning of a new period highly favourable to Ontario, in which it would emerge as a winner in the Canadian migration game, as in the late 1980s.

Having started in the previous year or even at the end of 1995, a real reversal took place in 1997 in the exchanges between the two westernmost provinces. ***An analysis of migration flows for 1997 shows that for the first time since 1985-1986, Alberta had a favourable migration balance in its exchanges with its neighbour to the west***. Alberta's economic growth has led a great number of job seekers to opt for that province as a destination. In 1997, Alberta had a positive balance in its exchanges with each of the nine other provinces, and the number of arriving migrants appears to have increased by some 18,000, while the number of departing migrants has apparently decreased slightly. Alberta's boom is largely responsible for the losses experienced by the other two Prairie provinces. Saskatchewan in particular, which had a positive balance with all other provinces further east, registered losses of 4,600 persons in its exchanges with Alberta. Preliminary data obtained from child tax benefit files (data not shown) show that this province continues to attract migrants.

Conversely, ***the power of attraction that British Columbia exerted for a decade on out-migrants from all other provinces waned considerably in 1997***. With a gain of 5,600 persons over the year, that province's balance remained positive, but that gain was much lower than those observed previously. During the preceding decade, the province registered positive balances that on average exceeded 30,000 per year. Nevertheless, British Columbia continues

Figure 13. Geographical Representation of Canada's Interprovincial Migration, 1997

Source: Statistics Canada, Demography Division, Population Estimates Section.

to be in an enviable position in its migration exchanges within Canada, since its migration balance with all other provinces, with the exception of Alberta, was still positive in 1997.

An analysis of migration balances can mask some aspects of internal migration that are brought out in Figure 13. On this geographic map showing the provinces of Canada, the total number of interprovincial migrants (both arriving and departing) is represented for each province by the size of the circles. Each circle is divided into two sections, representing the proportion of in-migrants (white portion) and out-migrants (black portion). The size of Ontario's place in the Canadian migration system is clear. ***Truly the hub of the system, Ontario is the origin or destination of nearly half of all interprovincial migrants (76,000 in-migrants and 70,900 out-migrants for a total of 146,900 migrants)***. Nearly a quarter of migrants arriving in other provinces come from Ontario; similarly, nearly a quarter of migrants departing from other provinces go to Ontario. But the two flows cancel each other out, resulting in a practically nil migration balance. By contrast, Quebec, which accounts for nearly a quarter of the Canadian population, is represented by a much smaller circle than Alberta and British Columbia, which are considerably less populous provinces. This is because the language barrier operates in both directions, limiting both the number of migrants entering Quebec from the other, predominantly English-speaking provinces and the opportunities of unilingual Francophone Quebecers to migrate to other provinces.

Appendices

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

NEWFOUNDLAND

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory							In	Out	Net	
1972	535.9	7.5	9.5	0.4	12.9	3.3	0.7	0.4	0.3	0.0	11.2	11.4	-0.2	-2.4
1973	543.4	4.4	8.5	-1.7	11.9	3.4	1.0	0.5	0.3	0.1	13.0	15.5	-2.5	-2.4
1974	547.8	4.7	7.0	0.1	10.2	3.3	1.0	0.5	0.2	0.0	12.4	13.0	-0.6	-2.4
1975	552.5	7.5	8.0	1.9	11.2	3.2	1.1	0.5	0.2	0.1	12.3	11.4	0.9	-2.4
1976	559.9	4.0	7.8	-2.2	11.1	3.3	0.7	0.4	0.2	0.0	9.7	12.4	-2.7	-1.6
1977	563.9	2.6	7.3	-3.6	10.4	3.1	0.6	0.4	0.2	0.0	8.1	12.2	-4.0	-1.1
1978	566.5	2.0	6.4	-3.4	9.5	3.1	0.4	0.4	0.2	0.0	8.1	11.7	-3.5	-1.1
1979	568.4	2.2	7.0	-3.7	10.2	3.1	0.6	0.4	0.2	0.1	8.9	13.1	-4.2	-1.1
1980	570.7	3.4	7.0	-2.5	10.3	3.3	0.6	0.3	0.2	0.1	9.3	12.4	-3.1	-1.1
1981	574.1	-0.6	6.9	-5.9	10.1	3.2	0.5	0.3	0.2	0.1	8.5	14.8	-6.2	-1.7
1982	573.5	4.2	5.8	0.5	9.2	3.4	0.4	0.5	0.2	0.1	10.6	10.3	0.3	-2.1
1983	577.7	2.0	5.4	-1.3	8.9	3.5	0.3	0.5	0.2	-0.2	7.6	8.7	-1.1	-2.1
1984	579.7	-0.5	5.0	-3.4	8.6	3.5	0.3	0.4	0.2	0.1	5.7	9.3	-3.6	-2.1
1985	579.2	-2.0	4.9	-4.9	8.5	3.6	0.3	0.4	0.2	0.0	6.0	11.0	-5.0	-2.1
1986	577.2	-1.6	4.6	-4.5	8.1	3.5	0.3	0.5	0.2	0.2	7.7	12.4	-4.7	-1.7
1987	575.6	-1.0	4.1	-3.8	7.8	3.6	0.5	0.4	0.2	0.3	8.4	12.8	-4.4	-1.3
1988	574.6	1.1	3.9	-1.5	7.5	3.6	0.4	0.2	0.2	0.3	10.0	12.2	-2.2	-1.3
1989	575.7	0.9	4.0	-1.8	7.8	3.7	0.5	0.2	0.1	0.4	10.1	12.7	-2.6	-1.3
1990	576.5	1.7	3.7	-0.7	7.6	3.9	0.5	0.2	0.1	-0.1	10.2	11.4	-1.1	-1.3
1991	578.2	1.2	3.4	-0.6	7.2	3.8	0.6	0.3	0.1	0.0	9.9	10.9	-1.1	-1.6
1992	579.4	1.6	3.1	0.2	6.9	3.8	0.8	0.3	0.1	2.1	8.1	10.7	-2.6	-1.8
1993	581.0	-3.6	2.5	-4.3	6.4	3.9	0.8	0.3	0.1	-1.6	6.9	10.3	-3.4	-1.8
1994	577.4	-6.4	2.3	-6.9	6.3	4.1	0.6	0.3	0.1	-1.2	6.3	12.5	-6.2	-1.8
1995	571.0	-6.7	1.9	-6.9	5.9	3.9	0.6	0.3	0.1	-0.8	7.0	13.5	-6.6	-1.8
1996	564.3	-6.8	1.8	-7.9	5.7	3.9	0.6	0.3	0.1	-0.4	6.6	14.5	-7.9	-0.7
1997 PR	557.5	-8.0	1.1	-9.1	5.4	4.3	0.4	0.3	0.1	-0.1	8.1	17.4	-9.3	...
1998 PR	549.4	-8.0	0.8	-8.8	5.1	4.3	0.4	0.3	0.1	0.0	10.0	19.1	-9.2	...
1999 PP	541.4	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	535.9	13.91	17.70	0.66	23.90	6.21	1.27	0.78	0.47	0.06	20.72	21.07	-0.35
1973	543.4	8.02	15.58	-3.16	21.82	6.24	1.80	0.96	0.46	0.13	23.85	28.45	-4.60
1974	547.8	8.52	12.63	0.25	18.61	5.97	1.88	0.94	0.44	-0.01	22.50	23.62	-1.12
1975	552.5	13.42	14.37	3.36	20.16	5.79	1.99	0.84	0.44	0.13	22.20	20.56	1.65
1976	559.9	7.08	13.89	-3.93	19.81	5.91	1.29	0.76	0.42	-0.02	17.28	22.14	-4.86
1977	563.9	4.58	12.86	-6.41	18.42	5.55	1.03	0.71	0.38	-0.01	14.41	21.51	-7.09
1978	566.5	3.46	11.30	-5.96	16.79	5.49	0.66	0.72	0.37	-0.02	14.36	20.59	-6.24
1979	568.4	3.92	12.35	-6.56	17.86	5.51	0.97	0.62	0.35	0.14	15.66	23.07	-7.40
1980	570.7	5.98	12.21	-4.37	18.05	5.84	0.96	0.50	0.31	0.24	16.19	21.58	-5.38
1981	574.1	-1.13	12.03	-10.27	17.65	5.63	0.84	0.61	0.28	0.09	14.89	25.76	-10.87
1982	573.5	7.38	10.06	0.95	15.94	5.88	0.71	0.82	0.39	0.22	18.40	17.94	0.45
1983	577.7	3.51	9.38	-2.27	15.43	6.04	0.48	0.88	0.36	-0.34	13.08	14.97	-1.89
1984	579.7	-0.84	8.70	-5.94	14.77	6.07	0.52	0.73	0.29	0.17	9.84	16.03	-6.19
1985	579.2	-3.51	8.55	-8.45	14.70	6.15	0.56	0.76	0.38	0.05	10.31	18.99	-8.68
1986	577.2	-2.77	7.91	-7.82	14.05	6.14	0.48	0.87	0.39	0.31	13.36	21.48	-8.12
1987	575.6	-1.76	7.20	-6.63	13.51	6.31	0.80	0.63	0.36	0.45	14.69	22.29	-7.61
1988	574.6	1.84	6.77	-2.61	13.02	6.24	0.71	0.41	0.31	0.53	17.43	21.18	-3.75
1989	575.7	1.52	7.02	-3.17	13.47	6.45	0.81	0.35	0.25	0.63	17.51	22.03	-4.52
1990	576.5	2.89	6.44	-1.23	13.17	6.73	0.95	0.34	0.22	-0.09	17.75	19.72	-1.97
1991	578.2	2.08	5.82	-1.01	12.38	6.56	1.11	0.54	0.23	0.08	17.02	18.89	-1.87
1992	579.4	2.69	5.38	0.34	11.92	6.55	1.36	0.46	0.25	3.61	14.04	18.46	-4.42
1993	581.0	-6.15	4.37	-7.49	11.09	6.72	1.39	0.45	0.23	-2.81	11.87	17.74	-5.87
1994	577.4	-11.12	3.98	-12.05	11.04	7.05	0.99	0.46	0.24	-2.02	10.97	21.78	-10.80
1995	571.0	-11.83	3.39	-12.13	10.32	6.93	1.06	0.48	0.24	-1.39	12.26	23.83	-11.57
1996	564.3	-12.21	3.24	-14.15	10.25	7.00	1.04	0.50	0.25	-0.77	11.71	25.88	-14.17
1997 PR	557.5	-14.50	1.98	-16.48	9.78	7.81	0.72	0.53	0.25	-0.16	14.68	31.44	-16.77
1998 PR	549.4	-14.75	1.46	-16.20	9.42	7.97	0.78	0.54	0.25	0.09	18.28	35.07	-16.79
1999 PP	541.4	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

PRINCE EDWARD ISLAND

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	113.0	1.3	1.0	1.0	2.0	1.1	0.2	0.1	0.1	0.0	4.2	3.4	0.9	-0.6
1973	114.3	0.9	0.9	0.7	1.9	1.0	0.3	0.1	0.1	0.0	4.8	4.3	0.5	-0.6
1974	115.2	1.8	0.9	1.6	1.9	1.1	0.3	0.1	0.1	0.0	5.2	3.8	1.4	-0.6
1975	117.0	1.2	0.9	1.0	1.9	1.1	0.2	0.1	0.1	0.0	4.6	3.8	0.8	-0.6
1976	118.3	1.1	0.8	0.5	1.9	1.1	0.2	0.1	0.1	0.0	4.3	4.0	0.3	-0.2
1977	119.4	1.7	0.9	0.8	2.0	1.0	0.2	0.1	0.1	0.0	3.9	3.3	0.6	0.0
1978	121.1	1.2	1.0	0.1	2.0	1.0	0.1	0.1	0.1	0.0	3.5	3.5	0.0	0.0
1979	122.3	1.0	0.9	0.0	1.9	1.0	0.3	0.1	0.1	0.0	3.4	3.6	-0.2	0.0
1980	123.3	0.1	0.9	-0.9	2.0	1.0	0.2	0.1	0.0	0.0	3.0	4.1	-1.1	0.0
1981	123.3	0.2	0.9	-0.7	1.9	1.0	0.1	0.1	0.1	0.0	3.5	4.3	-0.8	0.0
1982	123.5	0.9	0.9	0.1	1.9	1.0	0.2	0.1	0.1	0.0	3.4	3.4	0.0	-0.1
1983	124.5	1.6	0.9	0.9	1.9	1.1	0.1	0.1	0.0	0.0	3.3	2.5	0.8	-0.1
1984	126.1	1.3	0.8	0.6	2.0	1.1	0.1	0.1	0.0	0.0	3.1	2.5	0.5	-0.1
1985	127.4	0.9	0.9	0.1	2.0	1.1	0.1	0.1	0.0	0.0	2.8	2.8	0.0	-0.1
1986	128.3	0.1	0.8	-0.3	1.9	1.1	0.2	0.1	0.0	0.1	2.5	3.0	-0.5	-0.4
1987	128.4	0.7	0.8	0.5	2.0	1.1	0.2	0.0	0.0	0.0	3.1	2.8	0.3	-0.6
1988	129.1	0.9	0.9	0.6	2.0	1.1	0.2	0.1	0.0	0.0	3.5	3.1	0.4	-0.6
1989	130.0	0.3	0.8	0.1	1.9	1.1	0.2	0.1	0.0	0.0	3.3	3.4	-0.1	-0.6
1990	130.3	0.2	0.9	-0.1	2.0	1.1	0.2	0.0	0.0	0.0	2.8	3.1	-0.3	-0.6
1991	130.5	0.1	0.7	-0.3	1.9	1.2	0.2	0.1	0.0	0.0	2.9	3.3	-0.4	-0.2
1992	130.6	1.1	0.7	0.3	1.9	1.1	0.2	0.1	0.0	0.0	2.8	2.6	0.2	0.0
1993	131.7	1.3	0.6	0.7	1.8	1.1	0.2	0.1	0.0	0.0	2.5	1.9	0.5	0.0
1994	133.0	1.4	0.6	0.8	1.7	1.1	0.2	0.1	0.0	0.0	2.7	2.0	0.7	0.0
1995	134.4	1.1	0.6	0.6	1.8	1.2	0.2	0.1	0.0	0.1	2.6	2.2	0.4	0.0
1996	135.5	1.0	0.4	0.6	1.7	1.3	0.2	0.1	0.0	0.1	2.7	2.3	0.4	0.0
1997 PR	136.5	0.1	0.6	-0.5	1.6	1.0	0.1	0.1	0.0	-0.1	2.6	3.1	-0.5	...
1998 PR	136.6	0.2	0.4	-0.2	1.6	1.2	0.1	0.1	0.0	0.0	3.0	3.2	-0.3	...
1999 PP	136.9	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	113.0	11.56	8.43	8.77	17.69	9.26	1.54	0.92	0.56	0.03	37.36	29.81	7.55
1973	114.3	7.96	7.55	6.00	16.44	8.89	2.38	1.11	0.52	0.03	41.96	37.79	4.17
1974	115.2	15.86	7.33	14.05	16.70	9.37	2.68	1.09	0.51	0.01	44.46	32.52	11.94
1975	117.0	10.47	7.40	8.52	16.39	8.98	2.00	0.94	0.49	0.05	39.19	32.27	6.92
1976	118.3	9.33	7.12	4.21	16.34	9.22	1.98	0.85	0.49	-0.01	36.25	33.65	2.60
1977	119.4	14.42	7.68	6.34	16.38	8.70	1.60	0.80	0.43	0.00	32.30	27.20	5.11
1978	121.1	9.57	8.14	1.02	16.31	8.17	1.19	0.82	0.44	0.00	28.62	28.42	0.21
1979	122.3	8.11	7.43	0.29	15.75	8.32	2.35	0.70	0.42	0.05	27.65	29.48	-1.83
1980	123.3	0.49	7.49	-7.40	15.88	8.39	1.53	0.57	0.33	0.08	24.58	33.36	-8.78
1981	123.3	1.74	7.33	-5.29	15.37	8.04	1.04	0.69	0.41	0.30	28.12	34.46	-6.34
1982	123.5	7.52	7.61	0.70	15.52	7.90	1.33	0.76	0.48	-0.30	27.09	27.14	-0.05
1983	124.5	12.87	6.84	6.81	15.22	8.38	0.84	0.89	0.38	0.10	26.17	19.80	6.38
1984	126.1	10.38	6.67	4.48	15.42	8.75	0.86	0.72	0.34	-0.13	24.23	20.10	4.13
1985	127.4	6.70	7.02	0.45	15.71	8.68	0.88	0.67	0.34	0.00	22.13	22.23	-0.10
1986	128.3	1.05	6.29	-2.28	15.02	8.74	1.31	0.56	0.34	0.48	19.45	23.29	-3.84
1987	128.4	5.68	6.52	3.68	15.18	8.67	1.23	0.29	0.19	0.20	23.96	21.62	2.34
1988	129.1	6.71	6.68	4.52	15.26	8.58	1.18	0.49	0.37	0.19	26.86	23.59	3.27
1989	130.0	2.46	6.52	0.41	14.88	8.37	1.22	0.50	0.23	0.25	25.69	26.48	-0.78
1990	130.3	1.30	6.68	-0.92	15.44	8.77	1.35	0.25	0.11	-0.03	21.73	23.82	-2.09
1991	130.5	0.93	5.34	-2.50	14.44	9.10	1.15	0.78	0.32	-0.02	22.12	25.30	-3.18
1992	130.6	8.17	5.61	2.65	14.11	8.49	1.15	0.65	0.27	0.11	21.57	19.80	1.77
1993	131.7	9.76	4.60	5.25	13.26	8.65	1.24	0.53	0.29	0.23	18.57	14.55	4.02
1994	133.0	10.62	4.50	6.21	12.84	8.33	1.20	0.55	0.28	0.10	20.17	14.98	5.19
1995	134.4	8.49	4.45	4.13	13.00	8.54	1.19	0.56	0.28	0.49	18.96	16.23	2.73
1996	135.5	7.32	3.13	4.23	12.45	9.32	1.12	0.55	0.26	0.44	20.05	17.10	2.95
1997 PR	136.5	0.70	4.10	-3.40	11.64	7.54	1.09	0.56	0.27	-0.78	19.26	22.68	-3.41
1998 PR	136.6	1.78	2.96	-1.18	11.44	8.48	0.94	0.53	0.27	0.23	21.61	23.70	-2.09
1999 PP	136.9	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

NOVA SCOTIA

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	800.5	8.1	6.6	4.5	13.5	6.9	1.9	0.6	0.4	0.0	22.7	19.9	2.8	-3.0
1973	808.6	7.7	6.4	4.4	13.3	6.9	2.5	0.7	0.4	0.1	26.3	24.1	2.1	-3.0
1974	816.4	6.7	6.0	3.7	12.9	6.9	2.6	0.7	0.3	-0.1	27.2	25.6	1.6	-3.0
1975	823.1	9.7	6.3	6.4	13.1	6.8	2.1	0.7	0.3	0.1	25.6	21.1	4.5	-3.0
1976	832.8	5.8	5.9	2.0	12.8	7.0	1.9	0.6	0.3	-0.1	23.0	22.6	0.4	-2.0
1977	838.6	4.1	5.4	0.0	12.4	7.0	1.6	0.6	0.3	-0.1	19.9	21.2	-1.3	-1.3
1978	842.6	4.8	5.7	0.5	12.5	6.9	1.0	0.6	0.3	-0.1	19.5	19.6	-0.1	-1.3
1979	847.5	3.6	5.6	-0.6	12.4	6.8	1.3	0.5	0.3	0.1	18.4	20.3	-1.8	-1.3
1980	851.1	3.2	5.4	-0.8	12.4	7.0	1.6	0.4	0.3	0.2	18.5	21.0	-2.5	-1.3
1981	854.3	3.3	5.1	-0.8	12.1	7.0	1.4	0.5	0.3	0.6	19.3	21.7	-2.5	-1.0
1982	857.7	7.3	5.4	2.8	12.3	6.9	1.3	0.4	0.2	0.2	18.8	17.3	1.6	-0.8
1983	865.0	9.2	5.4	4.6	12.4	7.0	0.8	0.5	0.2	0.2	18.3	14.5	3.9	-0.8
1984	874.2	8.5	5.5	3.8	12.4	6.9	1.0	0.4	0.2	0.0	17.3	14.4	3.0	-0.8
1985	882.7	4.6	5.1	0.2	12.5	7.3	1.0	0.5	0.2	-0.2	16.7	16.9	-0.2	-0.8
1986	887.2	4.3	5.1	0.1	12.4	7.3	1.1	0.5	0.2	0.0	17.1	17.8	-0.7	-0.9
1987	891.5	3.1	5.0	-0.9	12.1	7.1	1.2	0.5	0.3	0.3	17.6	19.8	-2.2	-1.0
1988	894.6	5.8	4.8	2.0	12.2	7.4	1.3	0.4	0.2	0.8	19.2	19.1	0.1	-1.0
1989	900.4	6.5	5.0	2.5	12.5	7.5	1.5	0.5	0.2	0.7	20.4	19.8	0.6	-1.0
1990	907.0	5.4	5.5	0.8	12.9	7.4	1.6	0.7	0.2	-0.2	18.6	18.7	-0.1	-1.0
1991	912.3	5.0	4.8	1.6	12.0	7.3	1.5	1.0	0.3	-0.3	19.0	17.9	1.0	-1.4
1992	917.3	4.7	4.3	2.1	11.9	7.5	2.4	0.8	0.4	-0.2	18.1	17.8	0.4	-1.7
1993	922.0	3.5	4.0	1.2	11.6	7.6	3.0	0.8	0.4	-0.2	15.5	16.7	-1.1	-1.7
1994	925.5	1.5	3.3	-0.1	11.1	7.8	3.5	0.8	0.4	-0.4	15.1	17.8	-2.7	-1.7
1995	927.1	2.6	3.0	1.3	10.7	7.7	3.8	0.9	0.4	-0.1	15.4	17.4	-2.0	-1.7
1996	929.6	3.7	2.8	1.6	10.6	7.8	3.2	0.9	0.4	-0.1	16.0	17.1	-1.1	-0.7
1997 PR	933.4	1.4	1.9	-0.5	10.0	8.0	3.1	0.9	0.4	0.3	16.8	20.1	-3.4	...
1998 PR	934.8	0.8	1.6	-0.8	9.8	8.2	2.1	0.9	0.4	0.3	16.8	19.4	-2.7	...
1999 PP	935.6	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	800.5	10.07	8.24	5.61	16.82	8.58	2.33	0.73	0.44	0.05	28.21	24.67	3.54
1973	808.6	9.52	7.83	5.44	16.36	8.53	3.14	0.90	0.44	0.17	32.31	29.72	2.59
1974	816.4	8.21	7.37	4.55	15.79	8.42	3.17	0.88	0.41	-0.08	33.15	31.23	1.92
1975	823.1	11.69	7.64	7.73	15.85	8.21	2.57	0.79	0.41	0.16	30.88	25.50	5.38
1976	832.8	6.92	7.02	2.35	15.34	8.32	2.32	0.71	0.40	-0.10	27.51	27.08	0.43
1977	838.6	4.84	6.44	-0.02	14.72	8.28	1.89	0.67	0.36	-0.08	23.69	25.21	-1.52
1978	842.6	5.74	6.71	0.60	14.85	8.14	1.16	0.68	0.34	-0.10	23.07	23.20	-0.13
1979	847.5	4.28	6.55	-0.70	14.61	8.06	1.58	0.58	0.32	0.14	21.69	23.86	-2.17
1980	851.1	3.81	6.29	-0.92	14.51	8.21	1.89	0.47	0.30	0.28	21.68	24.61	-2.92
1981	854.3	3.90	5.98	-0.88	14.11	8.13	1.64	0.63	0.29	0.69	22.51	25.39	-2.88
1982	857.7	8.52	6.25	3.21	14.31	8.06	1.46	0.51	0.22	0.20	21.87	20.03	1.85
1983	865.0	10.56	6.16	5.34	14.26	8.10	0.96	0.59	0.28	0.26	21.08	16.64	4.44
1984	874.2	9.63	6.22	4.33	14.09	7.87	1.18	0.50	0.25	0.03	19.71	16.34	3.37
1985	882.7	5.15	5.80	0.27	14.07	8.27	1.10	0.57	0.27	-0.27	18.86	19.13	-0.26
1986	887.2	4.85	5.74	0.12	13.90	8.16	1.23	0.54	0.23	0.03	19.18	20.01	-0.83
1987	891.5	3.48	5.60	-1.04	13.56	7.96	1.37	0.58	0.28	0.33	19.68	22.12	-2.44
1988	894.6	6.43	5.31	2.18	13.57	8.26	1.45	0.48	0.24	0.90	21.38	21.31	0.08
1989	900.4	7.25	5.55	2.75	13.87	8.32	1.63	0.56	0.25	0.80	22.56	21.93	0.63
1990	907.0	5.90	6.03	0.93	14.15	8.12	1.72	0.76	0.26	-0.17	20.43	20.54	-0.12
1991	912.3	5.47	5.20	1.79	13.13	7.93	1.64	1.06	0.37	-0.29	20.73	19.59	1.14
1992	917.3	5.08	4.71	2.23	12.91	8.20	2.57	0.90	0.39	-0.21	19.73	19.34	0.39
1993	922.0	3.79	4.34	1.30	12.52	8.18	3.26	0.87	0.40	-0.27	16.79	18.03	-1.24
1994	925.5	1.66	3.59	-0.09	11.98	8.39	3.74	0.89	0.41	-0.44	16.33	19.24	-2.91
1995	927.1	2.79	3.27	1.35	11.55	8.28	4.06	0.92	0.42	-0.08	16.59	18.72	-2.12
1996	929.6	4.01	3.02	1.75	11.34	8.32	3.46	0.93	0.42	-0.06	17.21	18.35	-1.14
1997 PR	933.4	1.52	2.04	-0.52	10.65	8.61	3.30	0.96	0.43	0.30	17.94	21.53	-3.59
1998 PR	934.8	0.84	1.69	-0.86	10.48	8.79	2.23	0.97	0.44	0.31	17.92	20.79	-2.87
1999 PP	935.6	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

NEW BRUNSWICK

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	646.3	6.2	6.8	1.2	11.8	5.0	1.3	1.1	0.6	0.0	18.2	17.9	0.2	-1.8
1973	652.5	8.5	6.3	4.0	11.4	5.1	1.7	1.3	0.7	0.1	22.7	19.9	2.8	-1.8
1974	661.0	10.1	6.2	5.7	11.4	5.2	2.2	1.3	0.6	0.0	22.9	18.7	4.2	-1.8
1975	671.1	14.0	6.6	9.2	11.8	5.2	2.1	1.2	0.6	0.1	24.2	16.6	7.6	-1.8
1976	685.2	8.1	6.6	2.9	11.8	5.2	1.8	1.1	0.6	0.0	18.9	17.3	1.6	-1.4
1977	693.3	5.0	6.3	-0.2	11.5	5.2	1.2	1.0	0.5	0.0	15.5	16.4	-0.9	-1.1
1978	698.3	3.0	5.6	-1.5	10.8	5.2	0.7	1.1	0.5	0.0	14.3	16.0	-1.6	-1.1
1979	701.3	3.2	5.7	-1.4	10.8	5.2	1.1	0.9	0.5	0.1	14.3	16.5	-2.2	-1.1
1980	704.6	1.2	5.3	-3.0	10.6	5.3	1.2	0.7	0.5	0.2	13.2	17.4	-4.2	-1.1
1981	705.8	0.1	5.4	-4.0	10.5	5.1	1.0	1.1	0.5	0.4	13.8	18.6	-4.8	-1.3
1982	705.9	5.9	5.3	2.1	10.5	5.2	0.8	1.0	0.4	-0.2	14.8	12.7	2.2	-1.5
1983	711.8	6.2	5.3	2.4	10.5	5.2	0.6	0.8	0.4	0.0	13.2	10.9	2.3	-1.5
1984	718.0	4.5	5.1	0.9	10.4	5.3	0.6	0.9	0.4	-0.1	12.0	11.2	0.8	-1.5
1985	722.5	1.9	4.9	-1.5	10.1	5.2	0.6	1.0	0.5	0.0	11.5	13.1	-1.6	-1.5
1986	724.4	1.2	4.3	-2.6	9.8	5.5	0.6	0.9	0.4	0.1	11.4	14.3	-2.9	-0.5
1987	725.6	3.0	4.2	-1.4	9.6	5.4	0.6	0.8	0.4	0.1	13.2	15.0	-1.8	0.2
1988	728.6	4.0	4.2	-0.4	9.6	5.5	0.7	0.8	0.4	0.6	13.7	14.9	-1.2	0.2
1989	732.5	4.8	4.2	0.5	9.7	5.5	0.9	0.9	0.4	0.1	15.0	15.0	0.0	0.2
1990	737.4	5.9	4.4	1.3	9.8	5.4	0.8	0.9	0.4	-0.1	14.2	13.2	1.0	0.2
1991	743.2	3.6	4.0	0.1	9.5	5.5	0.7	0.9	0.4	-0.1	12.8	12.9	-0.1	-0.6
1992	746.8	1.7	3.8	-1.0	9.4	5.6	0.8	0.9	0.5	-0.2	12.0	13.1	-1.1	-1.1
1993	748.5	1.8	3.2	-0.4	9.0	5.8	0.7	0.9	0.4	-0.1	11.0	11.5	-0.5	-1.1
1994	750.3	1.4	3.1	-0.6	9.0	5.9	0.6	1.0	0.5	-0.2	10.7	11.2	-0.5	-1.1
1995	751.6	0.7	2.6	-0.8	8.6	5.9	0.6	1.0	0.5	0.0	11.2	12.1	-0.9	-1.1
1996	752.3	1.0	2.3	-0.9	8.2	5.9	0.7	1.0	0.5	-0.1	11.1	12.0	-0.9	-0.5
1997 PR	753.3	0.6	2.0	-1.4	7.9	5.9	0.7	1.0	0.5	0.1	13.3	14.9	-1.7	...
1998 PR	753.9	-1.0	1.6	-2.5	7.7	6.2	0.8	1.1	0.5	0.1	12.2	15.0	-2.8	...
1999 PP	752.9	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	646.3	9.49	10.51	1.78	18.18	7.67	2.00	1.65	0.99	0.07	28.00	27.63	0.37
1973	652.5	12.97	9.65	6.08	17.40	7.74	2.63	2.02	0.99	0.15	34.56	30.23	4.33
1974	661.0	15.19	9.37	8.55	17.18	7.81	3.31	1.97	0.92	-0.01	34.37	28.07	6.29
1975	671.1	20.67	9.79	13.56	17.38	7.59	3.09	1.75	0.91	0.15	35.63	24.46	11.17
1976	685.2	11.79	9.59	4.21	17.14	7.55	2.54	1.57	0.88	-0.03	27.47	25.09	2.38
1977	693.3	7.25	9.10	-0.31	16.55	7.45	1.66	1.48	0.78	-0.01	22.22	23.50	-1.27
1978	698.3	4.31	8.01	-2.18	15.42	7.41	0.94	1.51	0.76	-0.03	20.48	22.83	-2.35
1979	701.3	4.62	8.07	-1.94	15.43	7.36	1.63	1.29	0.72	0.16	20.29	23.44	-3.16
1980	704.6	1.76	7.57	-4.30	15.08	7.51	1.71	1.05	0.67	0.28	18.76	24.67	-5.91
1981	705.8	0.08	7.60	-5.66	14.88	7.28	1.40	1.50	0.64	0.55	19.61	26.36	-6.75
1982	705.9	8.34	7.47	2.99	14.80	7.33	1.06	1.44	0.56	-0.28	20.93	17.85	3.08
1983	711.8	8.67	7.43	3.33	14.71	7.28	0.77	1.10	0.50	-0.05	18.41	15.20	3.21
1984	718.0	6.21	7.06	1.22	14.38	7.32	0.83	1.19	0.60	-0.15	16.67	15.54	1.13
1985	722.5	2.64	6.76	-2.05	13.99	7.23	0.84	1.33	0.62	-0.04	15.94	18.09	-2.16
1986	724.4	1.67	5.97	-3.59	13.50	7.53	0.88	1.28	0.61	0.20	15.72	19.71	-4.00
1987	725.6	4.07	5.75	-1.91	13.19	7.44	0.88	1.16	0.59	0.20	18.17	20.59	-2.42
1988	728.6	5.45	5.70	-0.49	13.16	7.46	0.93	1.15	0.56	0.83	18.76	20.42	-1.66
1989	732.5	6.57	5.68	0.66	13.15	7.48	1.23	1.20	0.56	0.10	20.44	20.47	-0.03
1990	737.4	7.91	5.94	1.74	13.27	7.33	1.14	1.19	0.56	-0.14	19.13	17.76	1.37
1991	743.2	4.77	5.41	0.12	12.75	7.34	0.92	1.15	0.56	-0.10	17.24	17.35	-0.11
1992	746.8	2.28	5.06	-1.33	12.56	7.50	1.01	1.26	0.61	-0.22	16.10	17.55	-1.45
1993	748.5	2.37	4.33	-0.51	12.08	7.75	0.93	1.24	0.60	-0.15	14.73	15.39	-0.66
1994	750.3	1.83	4.08	-0.80	11.96	7.88	0.83	1.29	0.60	-0.28	14.29	14.97	-0.67
1995	751.6	0.93	3.49	-1.12	11.39	7.90	0.84	1.32	0.62	-0.01	14.90	16.14	-1.24
1996	752.3	1.28	3.03	-1.15	10.86	7.83	0.95	1.33	0.63	-0.18	14.70	15.91	-1.21
1997 PR	753.3	0.73	2.62	-1.89	10.51	7.89	0.93	1.37	0.63	0.17	17.59	19.83	-2.24
1998 PR	753.9	-1.29	2.06	-3.36	10.27	8.21	1.02	1.40	0.66	0.13	16.19	19.95	-3.76
1999 PP	752.9	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

QUEBEC

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	6,153.4	37.5	41.3	-5.0	83.6	42.3	18.6	11.0	6.6	0.7	36.2	56.0	-19.9	1.2
1973	6,190.9	49.5	41.4	7.0	84.1	42.7	26.9	13.5	6.7	1.7	39.6	54.4	-14.7	1.2
1974	6,240.4	58.3	42.9	14.3	85.6	42.8	33.5	13.3	6.3	-0.3	39.3	51.2	-11.9	1.2
1975	6,298.7	63.1	50.2	11.8	93.6	43.4	28.0	12.0	6.3	1.7	34.5	46.8	-12.3	1.2
1976	6,361.8	52.1	53.3	3.4	96.3	43.0	29.3	10.8	6.2	-0.5	31.6	52.4	-20.8	-4.6
1977	6,413.9	12.7	53.7	-32.3	97.2	43.5	19.2	10.3	5.5	-0.3	24.4	71.0	-46.5	-8.7
1978	6,426.6	18.4	51.8	-24.8	95.4	43.6	14.3	10.5	5.4	-0.5	24.5	57.9	-33.4	-8.7
1979	6,445.0	34.0	55.3	-12.7	98.6	43.3	19.5	9.0	5.1	1.8	23.6	53.7	-30.0	-8.7
1980	6,479.0	44.0	53.9	-1.2	97.4	43.5	22.5	7.4	4.7	3.3	21.9	46.2	-24.3	-8.7
1981	6,523.0	42.3	52.6	-0.2	95.3	42.7	21.2	7.8	4.2	4.8	23.6	46.1	-22.5	-10.1
1982	6,565.3	21.8	47.3	-14.3	90.8	43.5	21.3	9.5	4.8	-2.8	19.9	48.1	-28.2	-11.2
1983	6,587.1	26.5	43.9	-6.2	88.2	44.3	16.4	9.4	4.3	1.6	22.3	41.4	-19.1	-11.2
1984	6,613.6	31.9	43.4	-0.3	87.8	44.4	14.6	8.8	4.3	0.6	25.2	36.2	-10.9	-11.2
1985	6,645.5	39.4	40.6	9.9	86.3	45.7	14.9	7.6	4.1	4.6	25.4	31.4	-6.0	-11.2
1986	6,684.9	60.9	37.7	27.3	84.6	46.9	19.5	7.0	4.0	13.9	26.0	29.0	-3.0	-4.2
1987	6,745.8	61.3	36.2	24.2	83.8	47.6	26.8	5.8	3.5	7.1	26.0	33.4	-7.4	0.9
1988	6,807.1	79.3	38.8	39.6	86.6	47.8	25.8	5.1	3.0	22.9	27.8	34.8	-7.0	0.9
1989	6,886.4	75.3	44.1	30.4	92.4	48.3	34.2	5.5	2.9	7.2	29.5	37.8	-8.4	0.9
1990	6,961.7	71.7	49.6	21.2	98.0	48.4	40.8	5.3	2.6	-7.4	26.9	36.4	-9.6	0.9
1991	7,033.4	49.9	48.2	12.4	97.3	49.1	51.7	6.6	3.1	-22.8	24.5	37.6	-13.0	-10.7
1992	7,083.3	60.5	47.3	32.0	96.1	48.8	48.4	6.1	3.2	-3.6	25.5	35.3	-9.8	-18.9
1993	7,143.7	46.6	40.7	24.8	92.4	51.7	44.9	6.0	3.1	-9.8	24.5	32.0	-7.4	-18.9
1994	7,190.3	34.6	39.2	14.3	90.6	51.4	28.0	6.2	3.1	-0.3	22.7	33.0	-10.3	-18.9
1995	7,224.9	34.1	34.7	18.3	87.4	52.7	26.6	6.4	3.1	5.3	23.1	33.4	-10.2	-18.9
1996	7,259.0	34.6	32.9	9.6	85.2	52.3	29.7	6.5	3.1	-1.3	20.8	36.2	-15.4	-7.9
1997 PR	7,293.7	29.3	25.5	3.8	79.7	54.3	27.4	6.7	3.1	-2.2	23.3	41.1	-17.8	...
1998 PR	7,323.0	27.2	22.2	5.0	75.6	53.4	26.2	6.8	3.2	-1.6	25.5	41.4	-15.9	...
1999 PP	7,350.2	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	6,153.4	6.07	6.69	-0.81	13.55	6.86	3.01	1.78	1.07	0.12	5.86	9.08	-3.22
1973	6,190.9	7.97	6.66	1.13	13.52	6.86	4.32	2.17	1.07	0.27	6.38	8.75	-2.37
1974	6,240.4	9.30	6.84	2.28	13.66	6.82	5.34	2.12	1.00	-0.04	6.27	8.16	-1.89
1975	6,298.7	9.97	7.93	1.86	14.79	6.86	4.43	1.89	0.99	0.27	5.44	7.39	-1.95
1976	6,361.8	8.16	8.35	0.53	15.08	6.73	4.58	1.70	0.97	-0.07	4.95	8.20	-3.26
1977	6,413.9	1.98	8.37	-5.04	15.14	6.77	3.00	1.60	0.86	-0.04	3.80	11.05	-7.25
1978	6,426.6	2.85	8.05	-3.85	14.82	6.77	2.22	1.63	0.83	-0.07	3.80	9.00	-5.19
1979	6,445.0	5.26	8.56	-1.96	15.27	6.70	3.02	1.40	0.78	0.28	3.66	8.30	-4.65
1980	6,479.0	6.77	8.29	-0.19	14.99	6.69	3.47	1.14	0.72	0.50	3.37	7.11	-3.74
1981	6,523.0	6.46	8.04	-0.03	14.57	6.52	3.24	1.20	0.64	0.73	3.60	7.05	-3.45
1982	6,565.3	3.32	7.19	-2.17	13.81	6.61	3.24	1.44	0.73	-0.42	3.03	7.32	-4.28
1983	6,587.1	4.01	6.65	-0.94	13.36	6.71	2.48	1.42	0.65	0.24	3.39	6.28	-2.89
1984	6,613.6	4.82	6.54	-0.04	13.25	6.70	2.21	1.33	0.64	0.09	3.81	5.46	-1.65
1985	6,645.5	5.91	6.10	1.49	12.95	6.86	2.23	1.15	0.62	0.69	3.81	4.72	-0.90
1986	6,684.9	9.07	5.62	4.07	12.60	6.98	2.90	1.05	0.59	2.08	3.87	4.32	-0.45
1987	6,745.8	9.04	5.34	3.58	12.37	7.03	3.96	0.85	0.51	1.05	3.84	4.94	-1.09
1988	6,807.1	11.58	5.67	5.78	12.65	6.98	3.77	0.75	0.44	3.35	4.07	5.09	-1.02
1989	6,886.4	10.87	6.36	4.39	13.34	6.98	4.94	0.80	0.42	1.04	4.25	5.46	-1.21
1990	6,961.7	10.25	7.09	3.03	14.01	6.92	5.84	0.76	0.38	-1.05	3.84	5.21	-1.37
1991	7,033.4	7.07	6.83	1.75	13.79	6.96	7.33	0.93	0.44	-3.24	3.47	5.32	-1.85
1992	7,083.3	8.50	6.65	4.50	13.52	6.86	6.80	0.86	0.45	-0.51	3.58	4.96	-1.38
1993	7,143.7	6.50	5.68	3.46	12.89	7.22	6.27	0.84	0.43	-1.37	3.42	4.46	-1.04
1994	7,190.3	4.80	5.44	1.98	12.57	7.13	3.89	0.86	0.43	-0.05	3.15	4.57	-1.42
1995	7,224.9	4.71	4.79	2.52	12.07	7.28	3.67	0.88	0.43	0.73	3.19	4.61	-1.42
1996	7,259.0	4.76	4.52	1.32	11.71	7.19	4.08	0.89	0.43	-0.18	2.87	4.98	-2.11
1997 PR	7,293.7	4.01	3.49	0.53	10.91	7.42	3.75	0.92	0.42	-0.30	3.19	5.63	-2.43
1998 PR	7,323.0	3.71	3.03	0.68	10.31	7.28	3.57	0.93	0.44	-0.22	3.48	5.65	-2.17
1999 PP	7,350.2	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

ONTARIO

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	7,906.4	107.1	66.2	60.8	125.1	58.9	63.8	30.4	17.7	1.5	97.0	88.8	8.2	-19.9
1973	8,013.5	126.4	63.9	82.4	123.8	59.9	103.2	37.7	18.1	4.1	104.2	109.4	-5.3	-19.9
1974	8,139.9	120.3	63.7	76.6	124.2	60.6	120.1	37.5	17.3	-1.2	89.5	111.7	-22.2	-19.9
1975	8,260.2	106.3	65.2	61.1	125.8	60.6	98.5	33.9	17.5	4.1	80.9	106.0	-25.1	-19.9
1976	8,366.5	91.4	62.1	46.3	122.7	60.6	72.0	30.8	17.3	-1.7	88.7	99.2	-10.5	-17.0
1977	8,457.9	96.6	61.3	50.2	122.8	61.4	56.6	29.2	15.4	-1.2	98.6	90.0	8.6	-15.0
1978	8,554.5	71.0	59.8	26.1	121.0	61.1	42.4	30.1	15.2	-1.7	86.6	86.2	0.4	-15.0
1979	8,625.5	74.4	60.2	29.2	121.7	61.5	52.0	25.9	14.4	4.0	83.5	98.9	-15.3	-15.0
1980	8,699.9	72.4	60.6	26.8	123.3	62.7	62.3	21.2	13.0	7.6	74.2	109.1	-34.9	-15.0
1981	8,772.3	94.1	59.3	41.9	122.2	62.8	55.0	22.9	11.9	17.5	80.6	100.2	-19.7	-7.2
1982	8,866.4	117.8	61.2	58.3	124.9	63.7	53.0	27.7	13.4	-0.1	89.1	69.5	19.6	-1.7
1983	8,984.2	121.0	62.3	60.3	126.8	64.5	40.0	26.5	12.3	1.7	88.2	55.4	32.8	-1.7
1984	9,105.1	128.7	66.6	63.8	131.3	64.7	41.5	24.8	11.9	-1.6	89.1	52.4	36.7	-1.7
1985	9,233.9	129.6	65.5	65.8	132.2	66.7	40.7	24.1	12.4	3.4	88.4	54.9	33.4	-1.7
1986	9,363.5	172.7	66.0	107.0	133.9	67.9	49.6	21.7	11.4	24.7	100.1	57.1	42.9	-0.3
1987	9,536.2	205.8	66.5	138.7	134.6	68.1	84.8	19.4	10.8	22.2	104.7	64.4	40.3	0.6
1988	9,741.9	234.6	67.4	166.6	138.1	70.7	89.0	16.8	9.5	70.0	91.4	76.5	14.9	0.6
1989	9,976.5	218.0	74.4	143.0	145.3	70.9	104.8	17.5	9.3	47.6	87.3	88.5	-1.2	0.6
1990	10,194.5	164.8	80.1	84.1	150.9	70.8	113.4	16.6	8.4	-6.0	75.2	90.3	-15.1	0.6
1991	10,359.2	127.0	78.6	60.6	151.5	72.9	118.8	20.6	9.9	-37.5	71.2	81.2	-10.0	-12.2
1992	10,486.2	144.4	77.4	88.4	150.6	73.2	138.2	18.9	9.9	-27.2	68.0	81.5	-13.5	-21.4
1993	10,630.6	120.2	72.0	69.6	147.8	75.9	134.3	18.9	9.6	-42.6	62.3	75.1	-12.8	-21.4
1994	10,750.8	138.7	69.6	90.6	147.1	77.5	117.3	19.5	9.6	-12.2	66.0	70.5	-4.5	-21.4
1995	10,889.5	139.5	67.8	93.1	146.3	78.5	115.6	20.1	9.7	-10.2	68.5	70.3	-1.8	-21.4
1996	11,029.0	144.1	60.9	92.1	140.0	79.1	119.8	20.4	9.7	-15.3	67.0	68.7	-1.7	-8.9
1997 PR	11,173.1	161.1	53.5	107.6	133.0	79.5	117.4	21.2	9.8	-3.6	76.0	70.9	5.1	...
1998 PR	11,334.2	135.3	50.2	85.1	134.0	83.7	92.6	21.4	10.1	-6.5	83.6	73.4	10.2	...
1999 PP	11,469.4	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	7,906.4	13.45	8.31	7.64	15.71	7.40	8.02	3.81	2.22	0.18	12.19	11.16	1.03
1973	8,013.5	15.65	7.91	10.20	15.33	7.41	12.78	4.66	2.24	0.51	12.90	13.55	-0.65
1974	8,139.9	14.67	7.76	9.34	15.15	7.38	14.65	4.57	2.11	-0.14	10.91	13.62	-2.70
1975	8,260.2	12.79	7.84	7.34	15.13	7.29	11.84	4.08	2.10	0.49	9.74	12.75	-3.01
1976	8,366.5	10.86	7.38	5.51	14.59	7.21	8.56	3.66	2.05	-0.20	10.54	11.79	-1.25
1977	8,457.9	11.35	7.21	5.90	14.43	7.22	6.65	3.44	1.82	-0.14	11.59	10.58	1.01
1978	8,554.5	8.27	6.97	3.04	14.08	7.11	4.94	3.51	1.77	-0.20	10.08	10.03	0.05
1979	8,625.5	8.59	6.95	3.37	14.04	7.10	6.00	2.99	1.66	0.46	9.64	11.41	-1.77
1980	8,699.9	8.29	6.93	3.07	14.12	7.18	7.13	2.43	1.49	0.87	8.49	12.49	-4.00
1981	8,772.3	10.67	6.73	4.75	13.85	7.13	6.24	2.59	1.35	1.99	9.14	11.37	-2.23
1982	8,866.4	13.20	6.85	6.53	13.99	7.14	5.94	3.10	1.50	-0.01	9.99	7.79	2.20
1983	8,984.2	13.37	6.89	6.67	14.02	7.13	4.43	2.93	1.35	0.19	9.75	6.12	3.63
1984	9,105.1	14.04	7.26	6.96	14.32	7.06	4.53	2.71	1.30	-0.17	9.71	5.71	4.00
1985	9,233.9	13.94	7.04	7.08	14.22	7.18	4.38	2.60	1.33	0.37	9.50	5.91	3.59
1986	9,363.5	18.27	6.99	11.32	14.17	7.18	5.25	2.29	1.21	2.61	10.59	6.05	4.54
1987	9,536.2	21.35	6.90	14.38	13.97	7.07	8.80	2.01	1.12	2.30	10.86	6.68	4.18
1988	9,741.9	23.79	6.83	16.89	14.00	7.17	9.03	1.70	0.96	7.10	9.27	7.76	1.51
1989	9,976.5	21.61	7.38	14.17	14.41	7.03	10.39	1.74	0.92	4.72	8.65	8.77	-0.12
1990	10,194.5	16.03	7.79	8.18	14.69	6.89	11.04	1.62	0.81	-0.58	7.32	8.79	-1.47
1991	10,359.2	12.18	7.54	5.82	14.53	7.00	11.40	1.97	0.95	-3.60	6.83	7.79	-0.96
1992	10,486.2	13.68	7.33	8.38	14.26	6.93	13.09	1.79	0.94	-2.57	6.44	7.72	-1.28
1993	10,630.6	11.24	6.73	6.51	13.83	7.10	12.56	1.77	0.90	-3.99	5.83	7.02	-1.19
1994	10,750.8	12.82	6.43	8.37	13.59	7.16	10.84	1.81	0.89	-1.13	6.10	6.52	-0.42
1995	10,889.5	12.72	6.19	8.49	13.35	7.16	10.54	1.84	0.88	-0.93	6.25	6.41	-0.16
1996	11,029.0	12.98	5.49	8.30	12.61	7.13	10.79	1.84	0.88	-1.38	6.03	6.19	-0.15
1997 PR	11,173.1	14.31	4.75	9.56	11.82	7.07	10.43	1.88	0.87	-0.32	6.76	6.30	0.46
1998 PR	11,334.2	11.87	4.41	7.46	11.75	7.34	8.13	1.88	0.88	-0.57	7.33	6.44	0.90
1999 PP	11,469.4	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

MANITOBA

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	998.9	3.7	9.2	-3.3	17.4	8.2	5.3	2.4	1.4	0.1	26.1	33.8	-7.7	-2.2
1973	1,002.6	9.8	8.8	3.2	17.0	8.2	6.6	2.9	1.4	0.2	33.8	36.0	-2.2	-2.2
1974	1,012.4	7.1	8.9	0.4	17.3	8.4	7.4	2.9	1.4	-0.1	30.2	35.6	-5.4	-2.2
1975	1,019.5	8.6	8.8	2.0	17.1	8.4	7.1	2.6	1.4	0.2	28.4	32.5	-4.1	-2.2
1976	1,028.1	6.3	8.5	0.7	16.7	8.3	5.5	2.3	1.3	-0.1	25.1	28.7	-3.7	-2.9
1977	1,034.5	5.3	8.5	0.2	16.7	8.2	5.1	2.2	1.2	-0.1	21.6	25.3	-3.8	-3.4
1978	1,039.8	-2.5	8.1	-7.2	16.4	8.3	3.6	2.3	1.2	-0.1	18.7	28.2	-9.6	-3.4
1979	1,037.3	-4.9	8.0	-9.5	16.2	8.2	4.9	1.9	1.1	0.2	18.8	32.6	-13.8	-3.4
1980	1,032.4	0.3	7.6	-3.8	16.0	8.4	7.7	1.6	1.0	0.4	19.0	30.4	-11.3	-3.4
1981	1,032.8	7.7	7.4	1.5	16.1	8.6	5.4	2.0	1.0	0.7	22.7	26.3	-3.6	-1.2
1982	1,040.5	13.6	7.6	5.7	16.1	8.5	4.9	1.7	0.8	0.2	20.9	19.4	1.5	0.3
1983	1,054.1	12.7	8.1	4.2	16.6	8.5	4.0	2.1	1.0	0.4	18.5	17.5	1.0	0.3
1984	1,066.7	11.6	8.4	3.0	16.7	8.3	3.9	1.6	0.8	-0.2	17.2	17.2	0.0	0.3
1985	1,078.4	9.4	8.3	0.7	17.1	8.8	3.4	1.8	0.9	-0.1	17.2	19.0	-1.8	0.3
1986	1,087.7	6.9	8.1	-0.1	17.0	8.9	3.7	1.9	0.9	0.2	17.4	20.5	-3.0	-1.1
1987	1,094.6	5.2	8.2	-1.0	17.0	8.7	4.8	2.0	0.9	0.1	18.1	22.9	-4.8	-2.1
1988	1,099.8	1.7	7.9	-4.1	17.0	9.1	5.0	2.0	0.8	0.7	16.1	24.7	-8.6	-2.1
1989	1,101.5	1.3	8.5	-5.1	17.3	8.8	6.1	2.4	1.0	0.2	17.1	27.1	-10.0	-2.1
1990	1,102.8	3.4	8.5	-3.0	17.4	8.9	6.6	2.1	0.9	0.2	16.9	25.5	-8.6	-2.1
1991	1,106.3	4.0	8.3	-3.3	17.3	8.9	5.6	2.2	1.2	-0.4	16.1	23.6	-7.6	-1.0
1992	1,110.3	4.6	7.6	-2.8	16.6	9.0	5.1	2.1	1.1	-0.4	15.9	22.3	-6.4	-0.3
1993	1,114.9	5.2	7.4	-1.9	16.7	9.3	4.9	2.2	1.1	-0.4	14.6	19.8	-5.2	-0.3
1994	1,120.1	5.7	7.3	-1.4	16.5	9.1	4.1	2.3	1.1	-0.2	15.4	19.4	-4.0	-0.3
1995	1,125.8	5.0	6.5	-1.2	16.1	9.7	3.5	2.4	1.1	-0.1	15.5	18.9	-3.3	-0.3
1996	1,130.8	4.5	6.0	-1.4	15.5	9.5	3.9	2.4	1.1	-0.3	14.4	18.1	-3.7	-0.1
1997 PR	1,135.3	0.9	5.1	-4.2	14.7	9.5	3.9	2.5	1.1	0.2	14.3	21.3	-7.0	...
1998 PR	1,136.2	4.0	5.0	-1.0	14.8	9.8	3.0	2.5	1.2	0.0	19.0	21.6	-2.6	...
1999 PP	1,140.2	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	998.9	3.68	9.17	-3.34	17.38	8.22	5.26	2.37	1.43	0.08	26.09	33.82	-7.73
1973	1,002.6	9.71	8.70	3.15	16.84	8.14	6.57	2.90	1.43	0.23	33.53	35.71	-2.18
1974	1,012.4	7.04	8.74	0.41	17.04	8.30	7.31	2.84	1.34	-0.07	29.72	35.04	-5.32
1975	1,019.5	8.40	8.56	1.95	16.75	8.19	6.97	2.53	1.33	0.22	27.72	31.76	-4.04
1976	1,028.1	6.15	8.21	0.72	16.22	8.01	5.34	2.27	1.30	-0.10	24.30	27.84	-3.54
1977	1,034.5	5.13	8.23	0.16	16.12	7.89	4.88	2.14	1.14	-0.07	20.78	24.43	-3.65
1978	1,039.8	-2.39	7.80	-6.93	15.79	7.99	3.44	2.19	1.12	-0.10	17.97	27.18	-9.20
1979	1,037.3	-4.72	7.75	-9.20	15.69	7.94	4.74	1.87	1.06	0.21	18.14	31.48	-13.34
1980	1,032.4	0.32	7.31	-3.71	15.48	8.17	7.44	1.52	0.94	0.41	18.44	29.43	-10.98
1981	1,032.8	7.44	7.16	1.46	15.51	8.34	5.18	1.90	0.96	0.71	21.87	25.37	-3.49
1982	1,040.5	13.01	7.29	5.41	15.40	8.11	4.71	1.65	0.77	0.15	19.94	18.51	1.43
1983	1,054.1	11.93	7.62	4.01	15.66	8.04	3.75	2.02	0.98	0.40	17.44	16.54	0.90
1984	1,066.7	10.85	7.80	2.75	15.52	7.73	3.64	1.46	0.79	-0.16	16.00	16.05	-0.05
1985	1,078.4	8.63	7.70	0.63	15.79	8.08	3.15	1.65	0.87	-0.12	15.90	17.52	-1.62
1986	1,087.7	6.31	7.42	-0.11	15.59	8.17	3.44	1.73	0.81	0.16	15.97	18.75	-2.79
1987	1,094.6	4.70	7.51	-0.90	15.45	7.94	4.37	1.86	0.84	0.07	16.51	20.84	-4.33
1988	1,099.8	1.58	7.20	-3.72	15.47	8.27	4.55	1.83	0.75	0.61	14.65	22.45	-7.80
1989	1,101.5	1.21	7.71	-4.60	15.72	8.00	5.57	2.20	0.90	0.21	15.48	24.56	-9.08
1990	1,102.8	3.11	7.69	-2.68	15.71	8.02	6.01	1.88	0.86	0.14	15.31	23.11	-7.80
1991	1,106.3	3.61	7.52	-2.99	15.59	8.07	5.09	1.95	1.07	-0.35	14.48	21.32	-6.84
1992	1,110.3	4.12	6.84	-2.48	14.91	8.07	4.57	1.91	0.98	-0.35	14.31	20.08	-5.77
1993	1,114.9	4.68	6.63	-1.72	14.95	8.32	4.36	1.99	0.95	-0.38	13.06	17.72	-4.66
1994	1,120.1	5.09	6.53	-1.21	14.68	8.15	3.67	2.06	0.95	-0.20	13.68	17.25	-3.57
1995	1,125.8	4.41	5.72	-1.08	14.28	8.56	3.14	2.11	0.97	-0.11	13.75	16.71	-2.96
1996	1,130.8	3.97	5.28	-1.22	13.66	8.38	3.47	2.13	0.98	-0.24	12.67	15.97	-3.30
1997 PR	1,135.3	0.80	4.53	-3.73	12.90	8.37	3.43	2.20	1.00	0.22	12.61	18.78	-6.17
1998 PR	1,136.2	3.55	4.41	-0.86	13.01	8.61	2.63	2.21	1.04	-0.02	16.70	19.00	-2.30
1999 PP	1,140.2	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

SASKATCHEWAN

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	923.1	-9.5	7.9	-16.2	15.5	7.6	1.5	1.2	0.8	0.0	19.5	36.8	-17.3	-1.2
1973	913.6	-6.0	7.2	-12.0	14.8	7.6	1.9	1.5	0.7	0.1	26.2	39.4	-13.3	-1.2
1974	907.5	2.7	7.3	-3.3	15.1	7.8	2.2	1.4	0.7	0.0	28.0	32.8	-4.8	-1.2
1975	910.3	15.3	7.6	8.9	15.3	7.7	2.8	1.3	0.7	0.1	30.0	23.4	6.6	-1.2
1976	925.6	13.0	8.2	5.6	16.0	7.8	2.3	1.2	0.7	0.0	26.2	22.4	3.8	-0.8
1977	938.5	10.5	9.0	2.1	16.5	7.6	2.2	1.1	0.6	0.0	22.2	21.8	0.4	-0.5
1978	949.1	5.6	8.8	-2.7	16.6	7.7	1.6	1.1	0.6	0.0	19.3	23.0	-3.7	-0.5
1979	954.7	8.0	9.6	-1.1	16.9	7.4	2.8	1.0	0.5	0.1	21.1	24.6	-3.5	-0.5
1980	962.7	8.1	9.4	-0.8	17.1	7.7	3.6	0.8	0.5	0.2	20.7	25.0	-4.4	-0.5
1981	970.8	11.1	9.7	1.7	17.2	7.5	2.4	1.0	0.5	0.3	23.2	23.7	-0.5	-0.3
1982	981.9	12.6	9.5	3.3	17.7	8.2	2.1	1.1	0.5	0.0	21.0	19.3	1.7	-0.2
1983	994.5	13.8	10.2	3.7	17.8	7.6	1.7	1.2	0.5	0.1	19.5	17.0	2.5	-0.2
1984	1,008.3	12.6	10.3	2.5	18.0	7.7	2.2	1.1	0.5	0.2	17.3	16.6	0.7	-0.2
1985	1,021.0	6.3	10.1	-3.6	18.2	8.0	1.9	1.4	0.6	0.3	15.8	20.8	-5.0	-0.2
1986	1,027.3	2.7	9.5	-5.2	17.5	8.1	1.9	0.8	0.5	0.4	15.9	22.9	-7.0	-1.6
1987	1,030.0	-0.4	9.2	-7.0	17.0	7.8	2.1	1.0	0.5	0.4	15.7	24.7	-9.0	-2.6
1988	1,029.6	-8.1	8.7	-14.2	16.8	8.1	2.2	0.9	0.5	0.4	13.6	30.0	-16.3	-2.6
1989	1,021.4	-10.6	8.7	-16.7	16.7	7.9	2.1	1.0	0.5	0.2	15.3	33.9	-18.6	-2.6
1990	1,010.8	-8.4	8.0	-13.9	16.1	8.0	2.4	0.9	0.5	0.1	16.1	32.0	-15.9	-2.6
1991	1,002.3	-1.2	7.2	-7.9	15.3	8.1	2.5	0.9	0.5	-0.4	17.4	26.9	-9.5	-0.5
1992	1,001.2	2.4	7.2	-5.8	15.0	7.8	2.5	0.9	0.5	-0.1	17.3	25.1	-7.7	1.0
1993	1,003.5	4.2	6.1	-2.9	14.3	8.2	2.4	1.0	0.5	-0.3	16.3	20.8	-4.5	1.0
1994	1,007.7	4.2	5.7	-2.5	14.0	8.3	2.3	1.0	0.5	-0.2	16.9	20.8	-4.0	1.0
1995	1,011.9	4.4	5.0	-1.6	13.5	8.5	1.9	1.0	0.5	0.2	16.9	20.1	-3.2	1.0
1996	1,016.3	4.5	4.5	-0.5	13.3	8.8	1.8	1.0	0.5	0.1	16.8	18.7	-1.9	0.4
1997 PR	1,020.8	2.4	4.2	-1.8	12.9	8.6	1.8	1.1	0.5	0.3	17.8	21.1	-3.3	...
1998 PR	1,023.2	3.7	3.7	0.0	12.8	9.0	1.6	1.1	0.5	0.1	24.1	25.2	-1.1	...
1999 PP	1,026.9	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	923.1	-10.38	8.58	-17.62	16.85	8.26	1.65	1.30	0.82	0.05	21.22	40.05	-18.83
1973	913.6	-6.64	7.86	-13.16	16.26	8.40	2.05	1.59	0.81	0.14	28.75	43.31	-14.56
1974	907.5	3.00	8.04	-3.68	16.63	8.60	2.47	1.55	0.75	-0.03	30.81	36.13	-5.32
1975	910.3	16.66	8.27	9.73	16.63	8.36	3.09	1.38	0.74	0.14	32.66	25.52	7.14
1976	925.6	13.92	8.75	6.01	17.13	8.38	2.49	1.24	0.71	-0.05	28.15	24.05	4.10
1977	938.5	11.18	9.49	2.19	17.53	8.05	2.36	1.17	0.62	-0.03	23.52	23.11	0.41
1978	949.1	5.87	9.25	-2.88	17.39	8.14	1.64	1.19	0.61	-0.05	20.27	24.16	-3.89
1979	954.7	8.39	9.99	-1.10	17.67	7.69	2.88	1.02	0.57	0.13	22.01	25.68	-3.66
1980	962.7	8.36	9.73	-0.88	17.64	7.91	3.72	0.83	0.52	0.24	21.37	25.91	-4.53
1981	970.8	11.36	9.92	1.74	17.63	7.71	2.46	0.98	0.48	0.31	23.74	24.27	-0.53
1982	981.9	12.77	9.63	3.29	17.93	8.30	2.15	1.09	0.50	-0.03	21.29	19.53	1.76
1983	994.5	13.75	10.22	3.68	17.82	7.60	1.73	1.20	0.55	0.10	19.44	16.94	2.50
1984	1,008.3	12.46	10.16	2.46	17.75	7.60	2.12	1.07	0.49	0.19	17.08	16.36	0.72
1985	1,021.0	6.18	9.89	-3.56	17.73	7.84	1.86	1.41	0.62	0.27	15.39	20.28	-4.90
1986	1,027.3	2.63	9.19	-5.02	17.03	7.84	1.81	0.82	0.47	0.36	15.48	22.30	-6.82
1987	1,030.0	-0.42	8.96	-6.83	16.54	7.58	2.06	0.96	0.50	0.35	15.24	24.03	-8.78
1988	1,029.6	-7.93	8.45	-13.82	16.35	7.90	2.17	0.89	0.45	0.39	13.30	29.23	-15.93
1989	1,021.4	-10.46	8.59	-16.47	16.39	7.79	2.11	0.96	0.47	0.22	15.02	33.31	-18.29
1990	1,010.8	-8.39	7.99	-13.77	15.99	7.99	2.35	0.87	0.47	0.11	15.99	31.81	-15.82
1991	1,002.3	-1.18	7.19	-7.85	15.28	8.08	2.45	0.86	0.45	-0.40	17.38	26.86	-9.48
1992	1,001.2	2.35	7.19	-5.81	14.97	7.77	2.50	0.94	0.47	-0.14	17.30	25.01	-7.71
1993	1,003.5	4.15	6.07	-2.89	14.19	8.12	2.39	0.95	0.47	-0.28	16.20	20.72	-4.52
1994	1,007.7	4.19	5.67	-2.45	13.90	8.23	2.23	1.00	0.47	-0.24	16.72	20.64	-3.92
1995	1,011.9	4.32	4.93	-1.57	13.31	8.38	1.90	1.01	0.48	0.20	16.70	19.84	-3.15
1996	1,016.3	4.38	4.45	-0.47	13.06	8.61	1.79	1.03	0.48	0.12	16.48	18.31	-1.84
1997 PR	1,020.8	2.36	4.13	-1.77	12.58	8.45	1.72	1.06	0.48	0.30	17.38	20.60	-3.22
1998 PR	1,023.2	3.64	3.64	0.00	12.46	8.82	1.55	1.06	0.50	0.12	23.51	24.61	-1.11
1999 PP	1,026.9	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

ALBERTA

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory							In	Out	Net	
1972	1,680.0	30.9	18.6	11.9	29.3	10.7	8.4	7.8	4.5	0.3	60.5	54.0	6.5	0.4
1973	1,710.9	29.1	18.5	10.2	29.3	10.8	11.9	9.7	4.6	0.7	70.5	67.8	2.7	0.4
1974	1,739.9	42.6	18.6	23.7	29.8	11.3	14.3	9.7	4.4	-0.1	75.4	60.6	14.8	0.4
1975	1,782.6	56.6	20.2	36.0	31.6	11.4	16.3	8.9	4.5	0.7	76.7	53.2	23.5	0.4
1976	1,839.2	73.5	21.5	45.1	33.1	11.6	14.9	8.3	4.5	-0.2	83.5	49.3	34.2	6.9
1977	1,912.7	75.3	22.8	40.9	34.4	11.6	12.7	8.1	4.1	-0.1	82.8	50.5	32.3	11.6
1978	1,988.0	72.2	23.5	37.1	35.4	11.9	9.8	8.6	4.1	-0.2	82.6	50.6	32.0	11.6
1979	2,060.2	85.6	24.9	49.1	37.0	12.1	12.8	7.6	4.0	0.7	96.1	56.9	39.2	11.6
1980	2,145.7	102.9	27.0	64.3	39.7	12.7	18.8	6.4	3.7	1.2	106.7	59.8	46.9	11.6
1981	2,248.7	89.8	29.8	57.9	42.6	12.8	19.3	7.7	3.6	2.5	107.6	67.3	40.2	2.1
1982	2,338.5	43.8	32.1	16.4	45.0	13.0	17.9	9.2	4.1	-0.4	72.7	68.8	4.0	-4.7
1983	2,382.3	7.6	33.0	-20.7	45.6	12.6	10.7	9.2	4.0	0.0	45.9	72.1	-26.2	-4.7
1984	2,389.9	2.6	31.4	-24.1	44.1	12.7	10.7	8.3	3.9	0.2	39.3	69.9	-30.6	-4.7
1985	2,392.5	22.4	30.6	-3.5	43.8	13.2	9.0	8.5	4.3	1.2	49.9	59.5	-9.6	-4.7
1986	2,414.9	14.5	30.2	-11.8	43.7	13.6	9.7	7.3	3.7	2.5	49.5	69.8	-20.3	-3.9
1987	2,429.4	10.9	28.8	-14.6	42.1	13.3	12.0	7.3	3.8	4.6	45.3	72.9	-27.6	-3.3
1988	2,440.4	35.1	28.2	10.2	42.1	13.9	14.0	6.5	3.6	4.7	54.8	60.3	-5.5	-3.3
1989	2,475.5	44.6	29.5	18.4	43.4	13.9	16.2	6.4	3.3	1.9	64.7	61.3	3.4	-3.3
1990	2,520.1	51.7	28.9	26.1	43.0	14.1	18.9	6.6	3.1	-0.4	67.4	56.3	11.1	-3.3
1991	2,571.8	41.3	28.3	14.4	42.8	14.5	17.0	8.6	3.8	-3.3	61.2	55.7	5.5	-1.4
1992	2,613.1	40.7	27.4	13.5	42.0	14.7	17.7	7.5	3.8	-1.6	57.0	56.0	1.0	-0.1
1993	2,653.9	33.6	25.0	8.7	40.3	15.3	18.6	7.5	3.7	-3.7	49.7	52.0	-2.4	-0.1
1994	2,687.4	33.5	24.2	9.5	39.8	15.6	18.0	7.7	3.8	-1.8	51.0	53.7	-2.7	-0.1
1995	2,721.0	38.5	23.0	15.6	38.9	15.9	14.8	8.0	3.8	0.7	53.8	49.5	4.3	-0.1
1996	2,759.5	46.9	21.5	25.5	37.9	16.4	13.9	8.1	3.8	0.8	61.2	46.1	15.1	-0.1
1997 PR	2,806.4	64.7	20.5	44.2	36.9	16.5	13.2	8.4	3.9	1.7	79.2	45.4	33.8	...
1998 PR	2,871.0	73.6	20.3	53.3	37.8	17.5	11.2	8.5	4.0	0.9	97.9	52.2	45.7	...
1999 PP	2,944.6	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	1,680.0	18.21	10.96	7.03	17.27	6.31	4.95	4.59	2.66	0.15	35.70	31.85	3.86
1973	1,710.9	16.85	10.74	5.89	16.97	6.24	6.90	5.64	2.68	0.38	40.86	39.29	1.56
1974	1,739.9	24.21	10.54	13.45	16.93	6.39	8.11	5.51	2.52	-0.08	42.82	34.41	8.41
1975	1,782.6	31.26	11.17	19.88	17.46	6.29	8.99	4.92	2.49	0.36	42.35	29.40	12.96
1976	1,839.2	39.19	11.45	24.06	17.62	6.17	7.94	4.41	2.41	-0.12	44.51	26.27	18.24
1977	1,912.7	38.60	11.69	20.97	17.64	5.95	6.51	4.15	2.11	-0.07	42.46	25.88	16.58
1978	1,988.0	35.66	11.59	18.35	17.49	5.90	4.85	4.23	2.03	-0.11	40.79	24.98	15.80
1979	2,060.2	40.69	11.84	23.35	17.60	5.76	6.08	3.59	1.90	0.32	45.71	27.06	18.65
1980	2,145.7	46.84	12.31	29.26	18.09	5.78	8.57	2.92	1.69	0.56	48.56	27.20	21.36
1981	2,248.7	39.17	13.00	25.26	18.59	5.59	8.43	3.36	1.57	1.08	46.91	29.36	17.55
1982	2,338.5	18.55	13.59	6.95	19.08	5.49	7.60	3.88	1.73	-0.18	30.81	29.13	1.68
1983	2,382.3	3.18	13.82	-8.68	19.09	5.28	4.48	3.86	1.69	0.00	19.23	30.23	-11.00
1984	2,389.9	1.09	13.12	-10.08	18.44	5.32	4.46	3.49	1.65	0.09	16.45	29.24	-12.79
1985	2,392.5	9.33	12.72	-1.45	18.23	5.50	3.74	3.52	1.79	0.52	20.77	24.75	-3.98
1986	2,414.9	6.00	12.46	-4.86	18.06	5.60	3.99	3.02	1.53	1.02	20.44	28.82	-8.38
1987	2,429.4	4.50	11.83	-5.98	17.29	5.47	4.92	3.01	1.55	1.90	18.60	29.94	-11.33
1988	2,440.4	14.28	11.46	4.15	17.11	5.65	5.71	2.66	1.45	1.91	22.30	24.55	-2.25
1989	2,475.5	17.85	11.81	7.35	17.36	5.55	6.49	2.58	1.34	0.75	25.89	24.54	1.35
1990	2,520.1	20.32	11.37	10.25	16.89	5.53	7.44	2.59	1.21	-0.16	26.47	22.13	4.34
1991	2,571.8	15.94	10.93	5.57	16.50	5.57	6.55	3.30	1.45	-1.26	23.61	21.49	2.13
1992	2,613.1	15.47	10.39	5.13	15.96	5.57	6.72	2.84	1.45	-0.59	21.65	21.26	0.39
1993	2,653.9	12.57	9.34	3.27	15.09	5.74	6.95	2.80	1.40	-1.40	18.60	19.48	-0.88
1994	2,687.4	12.40	8.94	3.50	14.72	5.77	6.65	2.86	1.39	-0.68	18.86	19.85	-0.99
1995	2,721.0	14.04	8.40	5.69	14.20	5.80	5.41	2.91	1.38	0.26	19.63	18.08	1.55
1996	2,759.5	16.85	7.71	9.16	13.60	5.89	5.00	2.90	1.37	0.28	21.99	16.58	5.41
1997 PR	2,806.4	22.78	7.20	15.58	13.00	5.80	4.66	2.95	1.36	0.59	27.91	15.99	11.92
1998 PR	2,871.0	25.31	6.98	18.33	13.01	6.03	3.85	2.91	1.37	0.30	33.66	17.95	15.72
1999 PP	2,944.6	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

BRITISH COLUMBIA

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory							In	Out	Net	
1972	2,278.1	60.1	16.5	41.8	34.6	18.0	20.1	8.2	4.7	0.3	72.3	47.4	24.9	1.7
1973	2,338.1	71.8	16.3	53.8	34.4	18.1	27.9	10.3	4.8	0.8	87.1	56.6	30.5	1.7
1974	2,409.9	69.2	16.3	51.2	35.5	19.2	34.5	10.4	4.7	-0.2	84.2	61.5	22.7	1.7
1975	2,479.1	41.3	17.1	22.5	36.3	19.2	29.3	9.5	4.8	0.8	61.1	64.0	-2.9	1.7
1976	2,520.4	31.9	17.1	14.8	35.8	18.8	20.5	8.7	4.8	-0.3	59.3	60.8	-1.5	0.0
1977	2,552.3	43.6	18.1	26.7	36.7	18.6	15.4	8.3	4.3	-0.2	62.8	47.3	15.5	-1.2
1978	2,595.9	45.3	18.2	28.4	37.2	19.1	12.3	8.6	4.3	-0.3	65.4	44.7	20.7	-1.2
1979	2,641.2	65.2	19.2	47.3	38.4	19.2	16.6	7.4	4.1	0.8	76.6	43.4	33.2	-1.2
1980	2,706.4	83.1	20.7	63.6	40.1	19.4	24.4	6.2	3.8	1.5	80.0	39.8	40.2	-1.2
1981	2,789.6	64.7	21.6	43.7	41.5	19.9	22.1	6.6	3.4	3.3	70.4	48.8	21.6	-0.6
1982	2,854.2	34.0	22.0	12.1	42.7	20.7	19.0	8.1	3.9	-0.6	45.9	47.9	-2.0	-0.2
1983	2,888.2	37.5	23.1	14.6	42.9	19.8	14.4	8.1	3.7	0.5	43.9	39.9	4.0	-0.2
1984	2,925.7	35.2	23.2	12.1	43.9	20.7	13.2	8.7	3.8	0.4	42.0	38.5	3.5	-0.2
1985	2,960.9	27.8	21.8	6.2	43.1	21.3	12.2	8.6	3.9	1.8	42.6	45.8	-3.2	-0.2
1986	2,988.7	34.6	20.8	13.7	42.0	21.2	12.6	8.2	4.0	4.5	49.5	48.6	0.9	0.1
1987	3,023.3	59.6	20.0	39.2	41.8	21.8	18.9	6.9	3.7	5.8	60.9	43.3	17.6	0.4
1988	3,082.9	75.9	20.4	55.1	42.9	22.5	23.2	5.7	3.2	8.5	67.5	41.6	25.9	0.4
1989	3,158.8	90.1	20.8	68.9	43.8	23.0	25.3	6.0	3.2	9.0	79.4	42.0	37.4	0.4
1990	3,248.9	89.6	22.0	67.1	45.6	23.6	28.7	6.2	3.1	2.8	78.4	39.7	38.7	0.4
1991	3,338.5	85.6	21.6	59.4	45.6	24.0	32.1	6.9	3.3	-3.6	74.5	39.9	34.6	4.6
1992	3,424.1	101.4	21.5	72.2	46.2	24.6	36.7	6.7	3.4	-0.7	78.6	39.0	39.6	7.6
1993	3,525.5	103.3	20.3	75.4	46.0	25.8	45.7	6.8	3.4	-4.4	75.2	37.6	37.6	7.6
1994	3,628.9	108.7	21.1	80.0	47.0	25.9	49.0	7.1	3.4	0.2	74.5	40.1	34.4	7.6
1995	3,737.6	97.1	20.4	69.0	46.8	26.4	44.3	7.3	3.5	5.1	67.1	43.7	23.4	7.6
1996	3,834.7	90.5	18.6	68.7	46.1	27.5	52.1	7.4	3.5	2.7	62.7	44.9	17.8	3.2
1997 PR	3,925.2	68.3	17.2	51.2	44.6	27.4	47.9	7.7	3.5	1.9	59.3	53.7	5.6	...
1998 PR	3,993.5	27.9	15.5	12.4	44.6	29.1	35.9	7.7	3.6	-0.7	54.8	73.5	-18.8	...
1999 PP	4,021.4	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	2,278.1	26.02	7.17	18.10	14.97	7.81	8.71	3.56	2.03	0.13	31.34	20.54	10.80
1973	2,338.1	30.23	6.85	22.65	14.47	7.62	11.77	4.36	2.04	0.34	36.69	23.82	12.86
1974	2,409.9	28.30	6.66	20.93	14.50	7.84	14.11	4.27	1.92	-0.09	34.43	25.17	9.27
1975	2,479.1	16.54	6.85	8.99	14.51	7.66	11.71	3.81	1.92	0.32	24.46	25.60	-1.15
1976	2,520.4	12.56	6.73	5.83	14.13	7.41	8.08	3.42	1.89	-0.13	23.37	23.96	-0.59
1977	2,552.3	16.93	7.03	10.38	14.25	7.22	5.98	3.21	1.67	-0.08	24.39	18.36	6.02
1978	2,595.9	17.31	6.94	10.84	14.22	7.28	4.71	3.27	1.63	-0.12	24.98	17.07	7.90
1979	2,641.2	24.40	7.19	17.67	14.37	7.18	6.21	2.78	1.52	0.30	28.66	16.22	12.43
1980	2,706.4	30.24	7.54	23.15	14.59	7.05	8.89	2.27	1.37	0.54	29.09	14.48	14.62
1981	2,789.6	22.92	7.66	15.49	14.70	7.04	7.83	2.33	1.19	1.16	24.94	17.30	7.64
1982	2,854.2	11.83	7.68	4.23	14.89	7.21	6.62	2.81	1.34	-0.23	15.98	16.69	-0.70
1983	2,888.2	12.91	7.94	5.03	14.76	6.82	4.97	2.78	1.27	0.19	15.11	13.73	1.39
1984	2,925.7	11.95	7.89	4.12	14.92	7.03	4.48	2.96	1.28	0.12	14.27	13.08	1.19
1985	2,960.9	9.34	7.34	2.07	14.50	7.16	4.11	2.89	1.32	0.60	14.31	15.38	-1.08
1986	2,988.7	11.52	6.90	4.57	13.96	7.06	4.18	2.73	1.33	1.50	16.47	16.17	0.30
1987	3,023.3	19.53	6.55	12.85	13.70	7.14	6.20	2.26	1.22	1.92	19.95	14.18	5.77
1988	3,082.9	24.32	6.53	17.66	13.76	7.22	7.44	1.82	1.04	2.72	21.63	13.34	8.29
1989	3,158.8	28.11	6.48	21.50	13.66	7.18	7.91	1.88	1.00	2.80	24.77	13.11	11.66
1990	3,248.9	27.19	6.69	20.38	13.85	7.16	8.72	1.88	0.94	0.85	23.80	12.05	11.75
1991	3,338.5	25.33	6.40	17.56	13.49	7.09	9.49	2.05	0.98	-1.07	22.02	11.80	10.22
1992	3,424.1	29.19	6.20	20.79	13.28	7.08	10.56	1.93	0.97	-0.21	22.62	11.23	11.39
1993	3,525.5	28.89	5.66	21.09	12.87	7.20	12.78	1.91	0.94	-1.23	21.03	10.52	10.51
1994	3,628.9	29.51	5.72	21.72	12.76	7.04	13.32	1.92	0.93	0.04	20.23	10.88	9.35
1995	3,737.6	25.64	5.40	18.23	12.37	6.97	11.70	1.92	0.92	1.35	17.72	11.54	6.18
1996	3,834.7	23.33	4.79	17.71	11.89	7.10	13.42	1.90	0.90	0.70	16.17	11.58	4.59
1997 PR	3,925.2	17.26	4.34	12.92	11.26	6.92	12.09	1.93	0.89	0.47	14.97	13.57	1.40
1998 PR	3,993.5	6.95	3.87	3.08	11.12	7.25	8.96	1.93	0.91	-0.17	13.66	18.35	-4.68
1999 PP	4,021.4	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

YUKON

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory							In	Out	Net	
1972	19.7	1.1	0.3	0.7	0.5	0.1	0.1	0.1	0.0	0.0	2.8	2.2	0.6	0.1
1973	20.8	0.2	0.3	-0.2	0.4	0.1	0.1	0.1	0.0	0.0	2.3	2.6	-0.3	0.1
1974	21.0	0.6	0.4	0.1	0.5	0.1	0.1	0.1	0.0	0.0	2.8	2.7	0.1	0.1
1975	21.6	0.7	0.3	0.3	0.4	0.1	0.1	0.1	0.1	0.0	2.8	2.5	0.2	0.1
1976	22.3	0.3	0.3	-0.3	0.4	0.1	0.1	0.1	0.0	0.0	2.6	2.9	-0.4	0.3
1977	22.5	0.8	0.3	0.1	0.4	0.1	0.1	0.1	0.0	0.0	2.8	2.7	0.1	0.4
1978	23.4	0.6	0.4	-0.2	0.4	0.1	0.1	0.1	0.0	0.0	2.7	2.8	-0.2	0.4
1979	24.0	0.4	0.4	-0.4	0.5	0.1	0.1	0.1	0.0	0.0	2.4	2.8	-0.4	0.4
1980	24.3	0.4	0.3	-0.3	0.5	0.1	0.1	0.1	0.0	0.0	2.3	2.7	-0.4	0.4
1981	24.8	-0.6	0.4	-1.3	0.5	0.1	0.1	0.1	0.0	0.0	2.7	4.1	-1.4	0.3
1982	24.2	-0.6	0.4	-1.2	0.5	0.1	0.1	0.1	0.1	0.0	1.6	2.8	-1.2	0.3
1983	23.6	-0.1	0.4	-0.8	0.5	0.1	0.1	0.1	0.0	0.0	1.6	2.4	-0.8	0.3
1984	23.6	0.6	0.4	-0.1	0.5	0.1	0.0	0.1	0.0	0.0	1.6	1.7	-0.1	0.3
1985	24.2	0.2	0.3	-0.4	0.5	0.1	0.0	0.0	0.0	0.0	1.6	2.0	-0.4	0.3
1986	24.4	0.8	0.4	0.2	0.5	0.1	0.0	0.1	0.0	0.0	2.2	2.0	0.2	0.2
1987	25.1	0.7	0.4	0.2	0.5	0.1	0.1	0.1	0.0	0.0	2.3	2.2	0.1	0.2
1988	25.9	1.0	0.4	0.4	0.5	0.1	0.1	0.0	0.0	0.0	2.4	2.1	0.3	0.2
1989	26.8	0.7	0.4	0.1	0.5	0.1	0.1	0.0	0.0	0.0	2.3	2.3	0.0	0.2
1990	27.5	0.7	0.4	0.0	0.6	0.1	0.1	0.1	0.0	0.0	2.2	2.2	0.0	0.2
1991	28.2	1.2	0.5	0.6	0.6	0.1	0.1	0.1	0.0	0.0	2.4	1.9	0.5	0.2
1992	29.3	0.8	0.4	0.3	0.5	0.1	0.1	0.1	0.0	0.0	2.3	2.1	0.2	0.1
1993	30.2	-0.2	0.4	-0.7	0.5	0.1	0.1	0.1	0.0	0.0	1.6	2.4	-0.8	0.1
1994	30.0	0.3	0.3	-0.2	0.4	0.1	0.1	0.1	0.0	0.0	1.8	2.0	-0.2	0.1
1995	30.3	1.2	0.3	0.7	0.5	0.2	0.1	0.1	0.0	0.0	2.3	1.7	0.7	0.1
1996	31.5	0.6	0.3	0.3	0.4	0.1	0.1	0.1	0.0	0.0	1.9	1.7	0.2	0.1
1997 PR	32.1	0.0	0.4	-0.4	0.5	0.1	0.1	0.1	0.0	0.0	1.8	2.2	-0.4	...
1998 PR	32.1	-1.1	0.3	-1.4	0.4	0.1	0.1	0.1	0.0	0.0	1.7	3.2	-1.5	...
1999 PP	31.0	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	19.7	53.78	17.17	32.32	22.25	5.08	5.72	4.14	2.22	0.15	138.94	110.57	28.37
1973	20.8	7.61	14.79	-11.34	20.10	5.31	4.31	5.22	2.25	0.19	109.42	122.29	-12.88
1974	21.0	28.53	17.91	6.53	23.27	5.36	4.70	4.98	2.26	0.00	130.67	126.11	4.56
1975	21.6	31.02	13.50	13.50	18.61	5.11	4.43	4.47	2.28	0.23	125.46	114.42	11.04
1976	22.3	12.72	14.51	-14.15	20.00	5.49	3.26	3.97	2.19	0.00	114.32	129.95	-15.62
1977	22.5	35.21	14.29	2.92	18.87	4.58	2.27	3.70	1.87	0.00	122.28	119.79	2.48
1978	23.4	25.49	15.14	-7.10	18.90	3.76	2.41	3.76	1.78	0.00	112.16	119.69	-7.53
1979	24.0	15.82	15.49	-16.81	20.75	5.26	2.86	3.15	1.78	0.21	98.53	117.04	-18.51
1980	24.3	17.11	14.18	-13.89	19.39	5.21	3.91	2.53	1.43	0.37	93.45	110.52	-17.07
1981	24.8	-22.67	16.14	-52.21	21.90	5.76	4.49	3.51	1.67	1.35	110.58	166.79	-56.21
1982	24.2	-23.20	17.01	-51.37	21.94	4.93	2.88	4.60	2.30	-1.46	67.80	118.29	-50.49
1983	23.6	-3.52	18.09	-32.96	22.88	4.79	3.09	2.54	1.10	-0.38	65.96	100.19	-34.23
1984	23.6	24.77	17.23	-3.65	21.75	4.53	1.72	2.10	1.17	0.21	66.60	71.25	-4.65
1985	24.2	8.74	14.06	-16.36	19.13	5.07	1.48	1.77	0.95	1.32	65.37	83.71	-18.34
1986	24.4	31.47	14.95	7.55	19.51	4.56	1.98	2.14	1.37	-0.89	88.50	81.27	7.23
1987	25.1	28.73	14.50	6.82	18.74	4.23	3.14	2.31	1.49	0.59	90.50	86.59	3.92
1988	25.9	36.72	14.60	14.91	19.76	5.16	2.58	1.59	0.72	-0.04	92.90	79.66	13.24
1989	26.8	24.07	14.17	2.94	17.66	3.50	3.68	1.55	0.81	1.10	85.23	86.33	-1.10
1990	27.5	23.47	15.85	0.79	19.98	4.13	2.87	2.01	0.86	0.00	79.89	80.82	-0.93
1991	28.2	41.36	15.79	19.83	19.76	3.97	2.92	2.61	1.25	1.63	81.78	65.15	16.63
1992	29.3	28.42	13.84	9.57	17.77	3.93	4.47	2.52	1.08	-0.67	78.45	71.22	7.22
1993	30.2	-6.41	12.79	-24.13	16.88	4.09	3.42	2.13	1.10	-1.43	54.40	79.49	-25.09
1994	30.0	9.89	10.55	-5.57	14.66	4.11	3.88	2.12	1.06	-0.27	59.35	67.47	-8.13
1995	30.3	38.62	10.13	23.70	15.22	5.08	2.82	2.14	1.04	0.74	74.72	53.48	21.24
1996	31.5	20.34	10.15	8.24	13.93	3.77	2.73	2.04	1.01	-0.22	59.92	53.16	6.76
1997 PR	32.1	-1.46	10.90	-12.36	14.79	3.89	2.65	2.12	1.03	-0.44	54.78	68.26	-13.48
1998 PR	32.1	-35.62	10.15	-45.77	14.12	3.97	1.81	2.03	1.02	0.54	55.35	102.46	-47.10
1999 PP	31.0	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

NORTHWEST TERRITORIES (Nunavut included)

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory							In	Out	Net	
1972	37.8	2.2	1.0	1.1	1.2	0.3	0.2	0.0	0.0	0.0	4.4	3.5	0.9	0.1
1973	40.0	0.8	1.0	-0.3	1.2	0.2	0.2	0.0	0.0	0.0	3.6	4.0	-0.4	0.1
1974	40.8	1.3	0.8	0.3	1.0	0.2	0.2	0.0	0.0	0.0	4.3	4.2	0.2	0.1
1975	42.1	1.6	1.0	0.6	1.2	0.2	0.2	0.0	0.0	0.0	4.3	3.9	0.4	0.1
1976	43.8	0.6	1.0	-0.6	1.2	0.2	0.2	0.0	0.0	0.0	4.1	4.9	-0.8	0.3
1977	44.4	0.4	1.0	-0.9	1.2	0.2	0.1	0.0	0.0	0.0	4.4	5.4	-1.0	0.3
1978	44.8	0.5	1.0	-0.9	1.2	0.2	0.1	0.0	0.0	0.0	3.9	4.8	-1.0	0.3
1979	45.2	0.7	1.1	-0.7	1.3	0.2	0.1	0.0	0.0	0.0	3.7	4.6	-0.8	0.3
1980	45.9	0.6	1.1	-0.8	1.3	0.2	0.1	0.0	0.0	0.0	3.4	4.3	-0.9	0.3
1981	46.5	1.8	1.1	0.3	1.3	0.2	0.1	0.0	0.0	0.0	4.2	4.1	0.2	0.3
1982	48.2	2.1	1.1	0.6	1.4	0.2	0.1	0.1	0.0	0.0	3.8	3.2	0.6	0.4
1983	50.4	1.6	1.3	0.0	1.5	0.2	0.1	0.0	0.0	0.0	3.4	3.4	0.0	0.4
1984	52.0	1.7	1.2	0.1	1.4	0.2	0.1	0.0	0.0	0.0	3.5	3.5	0.1	0.4
1985	53.6	1.0	1.2	-0.6	1.4	0.2	0.1	0.1	0.0	0.0	3.4	4.0	-0.6	0.4
1986	54.6	-0.1	1.3	-1.8	1.5	0.2	0.1	0.1	0.0	0.0	3.1	4.9	-1.8	0.4
1987	54.5	0.7	1.3	-1.1	1.5	0.2	0.1	0.1	0.0	0.0	3.5	4.7	-1.2	0.5
1988	55.2	1.2	1.3	-0.7	1.6	0.2	0.1	0.1	0.0	0.1	3.5	4.3	-0.8	0.5
1989	56.4	1.4	1.2	-0.3	1.5	0.2	0.1	0.1	0.0	0.0	3.7	4.1	-0.4	0.5
1990	57.8	1.9	1.4	0.1	1.6	0.2	0.1	0.1	0.0	0.1	3.8	3.8	0.0	0.5
1991	59.7	1.9	1.4	0.2	1.6	0.2	0.1	0.1	0.0	0.0	3.7	3.6	0.1	0.3
1992	61.6	1.2	1.3	-0.3	1.6	0.3	0.1	0.1	0.0	-0.1	3.8	4.1	-0.3	0.2
1993	62.9	1.6	1.3	0.1	1.6	0.3	0.2	0.1	0.0	0.0	3.6	3.6	0.0	0.2
1994	64.4	1.6	1.3	0.0	1.6	0.2	0.1	0.1	0.0	0.0	3.7	3.8	-0.1	0.2
1995	66.0	1.0	1.4	-0.6	1.6	0.2	0.1	0.1	0.0	0.0	3.3	4.0	-0.7	0.2
1996	67.0	0.5	1.3	-0.9	1.6	0.3	0.1	0.1	0.0	0.0	3.3	4.2	-0.9	0.1
1997 PR	67.5	0.0	1.2	-1.2	1.5	0.3	0.1	0.1	0.0	0.0	3.4	4.6	-1.2	...
1998 PR	67.5	0.2	1.2	-1.0	1.4	0.3	0.1	0.1	0.0	0.0	3.7	4.7	-1.0	...
1999 PP	67.7	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	37.8	55.93	24.84	27.64	31.83	6.99	4.86	0.77	0.46	-0.03	113.20	90.07	23.12
1973	40.0	20.58	23.62	-6.36	29.78	6.16	4.40	0.96	0.47	0.02	88.53	98.82	-10.29
1974	40.8	31.21	20.15	7.83	25.11	4.96	4.82	0.92	0.36	-0.10	104.82	101.15	3.66
1975	42.1	38.36	22.32	12.92	27.35	5.03	4.49	0.84	0.42	0.00	100.13	91.29	8.84
1976	43.8	13.05	22.03	-14.73	26.84	4.81	4.02	0.75	0.45	-0.11	92.98	111.31	-18.33
1977	44.4	9.60	22.25	-20.24	26.74	4.49	2.74	0.72	0.40	-0.11	98.06	120.60	-22.55
1978	44.8	10.13	22.19	-19.55	26.74	4.55	2.53	0.71	0.33	-0.11	85.59	107.18	-21.59
1979	45.2	15.22	23.64	-15.84	28.14	4.50	3.05	0.61	0.33	-0.02	81.24	99.82	-18.58
1980	45.9	12.01	23.02	-18.30	28.17	5.15	2.01	0.50	0.28	0.02	72.96	93.08	-20.12
1981	46.5	36.98	23.35	6.33	27.49	4.14	1.92	0.36	0.17	0.91	89.30	85.60	3.69
1982	48.2	43.06	22.92	13.04	27.62	4.71	2.25	1.62	0.67	0.57	76.92	65.75	11.17
1983	50.4	31.02	24.43	-0.27	29.14	4.71	1.15	0.78	0.31	-0.27	66.41	67.10	-0.68
1984	52.0	31.26	22.87	1.74	27.36	4.49	1.42	0.85	0.36	-0.15	67.14	66.18	0.97
1985	53.6	18.54	22.60	-10.55	26.56	3.96	1.31	1.50	0.52	-0.07	63.17	73.98	-10.81
1986	54.6	-1.72	23.31	-33.01	27.62	4.31	1.23	1.39	0.51	0.04	56.61	90.01	-33.39
1987	54.5	12.70	24.17	-20.52	27.76	3.59	1.31	1.24	0.82	0.07	63.92	85.41	-21.49
1988	55.2	20.77	23.93	-12.04	27.87	3.94	1.36	0.97	0.27	1.24	63.20	77.14	-13.94
1989	56.4	24.57	21.55	-5.68	25.91	4.36	1.75	1.98	0.63	0.39	65.34	71.80	-6.47
1990	57.8	33.04	23.10	1.50	26.96	3.86	1.28	1.67	0.75	1.24	63.90	64.01	-0.10
1991	59.7	31.66	23.02	3.15	26.93	3.91	2.04	0.92	0.73	-0.07	60.19	58.82	1.37
1992	61.6	19.57	20.85	-4.76	24.97	4.11	1.78	1.03	0.58	-1.25	61.71	66.54	-4.84
1993	62.9	24.84	20.41	1.02	24.50	4.09	2.69	1.23	0.58	-0.41	55.98	56.60	-0.61
1994	64.4	23.78	20.53	-0.06	24.23	3.70	2.28	1.30	0.58	-0.64	57.32	58.30	-0.98
1995	66.0	14.68	20.85	-9.42	24.27	3.41	1.44	1.35	0.57	0.06	50.37	60.50	-10.14
1996	67.0	7.81	19.19	-12.72	23.24	4.05	1.37	1.44	0.57	0.04	48.70	61.96	-13.25
1997 PR	67.5	0.65	18.00	-17.35	21.77	3.78	1.39	1.47	0.62	0.34	50.54	68.78	-18.23
1998 PR	67.5	2.53	17.16	-14.63	21.22	4.07	0.89	1.42	0.65	0.49	54.13	69.36	-15.23
1999 PP	67.7	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A2. Nuptiality

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T. [1]	Canada
	Number of Marriages												
1978	3,841	939	6,560	5,310	45,936	67,491	8,232	7,139	18,277	21,388	194	216	185,523
1979	3,737	893	6,920	5,355	46,341	67,980	7,769	7,272	18,999	22,087	181	277	187,811
1980	3,783	939	6,791	5,321	44,848	68,840	7,869	7,561	20,818	23,830	200	269	191,069
1981	3,758	849	6,632	5,108	41,005	70,281	8,123	7,329	21,781	24,699	235	282	190,082
1982	3,764	855	6,486	4,923	38,354	71,595	8,264	7,491	22,312	23,831	225	260	188,360
1983	3,778	937	6,505	5,260	36,144	70,893	8,261	7,504	21,172	23,692	243	286	184,675
1984	3,567	1,057	6,798	5,294	37,433	71,922	8,393	7,213	20,052	23,397	212	259	185,597
1985	3,220	956	6,807	5,312	37,026	72,891	8,296	7,132	19,750	22,292	185	229	184,096
1986	3,421	970	6,445	4,962	33,083	70,839	7,816	6,820	18,896	21,826	183	257	175,518
1987	3,481	924	6,697	4,924	32,616	76,201	7,994	6,853	18,640	23,395	189	237	182,151
1988	3,686	965	6,894	5,292	33,519	78,533	7,908	6,767	19,272	24,461	209	222	187,728
1989	3,905	1,019	6,828	5,254	33,325	80,377	7,800	6,637	19,888	25,170	214	223	190,640
1990	3,791	996	6,386	5,044	32,060	80,097	7,666	6,229	19,806	25,216	218	228	187,737
1991	3,480	876	5,845	4,521	28,922	72,938	7,032	5,923	18,612	23,691	196	215	172,251
1992	3,254	850	5,623	4,313	25,841	70,079	6,899	5,664	17,871	23,749	221	209	164,573
1993	3,163	885	5,403	4,177	25,021	66,575	6,752	5,638	17,860	23,447	180	216	159,317
1994	3,318	850	5,373	4,219	24,986	66,693	6,585	5,689	18,096	23,739	169	241	159,958
1995	3,404	877	5,329	4,252	24,238	67,583	6,703	5,799	18,044	23,597	207	218	160,251
1996	3,194	924	5,392	4,366	23,968	66,208	6,448	5,671	17,283	22,834	197	206	156,691
1997	3,227	876	5,177	4,089	23,958	64,535	6,261	5,707	17,254	21,845	167	210	153,306

[1] Nunavut included.

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

Table A3.1 Age-Specific First Marriage Rates (per 1,000) for Male Cohorts, 1947-1980, Canada

Age	Year of Birth																																
	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
	Year of 17th Birthday																																	
	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
17	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.56	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.9	1.1	1.6	1.5	2.0	2.5	3.3	3.8	4.4	4.8	4.6	4.2	4.3	4.0	3.8	3.9	3.9	3.9	4.0
18		1.4	1.6	1.7	1.7	1.8	2.2	2.3	2.7	2.6	2.7	2.8	3.3	3.6	3.9	4.4	5.9	6.6	8.3	9.3	10.7	12.6	14.6	17.8	19.0	20.0	21.2	18.4	17.9	17.2	16.9	17.8	18.1	18.3
19			4.2	4.6	5.0	5.1	5.2	5.8	6.5	7.1	7.4	8.0	8.2	9.0	10.0	11.0	13.0	16.0	19.0	21.8	24.2	27.6	31.3	35.2	39.6	42.8	45.9	46.7	42.4	41.7	39.8	41.0	44.2	44.6
20				8.8	8.9	10.0	10.8	10.5	12.4	13.8	15.1	16.5	16.8	17.0	19.4	21.4	23.8	28.0	33.6	38.6	42.5	47.3	51.2	56.3	59.0	67.7	73.4	77.5	79.7	73.7	73.6	73.4	77.4	82.8
21					15.0	16.1	18.0	18.7	18.9	21.1	23.1	26.6	29.0	28.7	29.4	32.2	36.7	40.3	45.7	52.2	58.0	64.1	68.1	71.6	75.5	78.2	90.9	94.6	103.6	110.6	110.3	114.0	120.1	127.6
22						22.9	23.7	26.6	27.7	28.2	30.6	34.9	38.3	40.5	41.2	41.6	45.5	50.4	54.5	59.0	65.7	69.2	75.9	78.4	79.1	81.7	86.0	96.2	104.1	112.1	120.1	118.3	130.3	140.0
23							31.2	33.7	35.7	36.6	37.7	39.9	45.3	50.6	50.7	51.9	53.1	55.3	60.6	63.7	64.6	69.7	72.7	76.9	76.4	77.6	79.5	81.6	90.6	95.5	104.0	111.9	110.1	130.7
24								38.9	40.8	43.9	44.8	45.0	48.5	51.6	57.1	57.2	57.9	57.5	59.3	63.4	64.5	65.3	66.2	68.0	69.7	69.2	68.6	69.3	70.6	77.9	82.7	87.5	92.7	92.8
25									44.8	47.8	48.5	49.7	49.4	51.1	54.5	59.0	60.4	58.5	56.8	57.0	59.6	60.2	57.8	59.0	60.5	60.4	59.1	58.2	59.1	58.6	63.7	65.5	69.1	71.9
26										47.2	47.2	49.6	49.6	48.9	48.9	51.4	55.0	55.3	53.8	49.5	49.8	52.4	50.1	49.9	50.8	50.0	48.7	47.8	46.4	47.4	46.3	49.1	50.3	53.0
27											44.2	45.2	45.8	46.1	44.3	44.8	45.8	49.2	48.2	46.6	44.4	42.8	44.2	42.7	40.6	40.8	40.8	39.8	38.6	37.3	37.2	36.6	38.2	39.0
28												40.8	41.3	41.2	40.1	38.6	39.3	39.3	42.5	40.9	39.0	36.3	34.6	35.9	34.5	33.8	33.1	32.4	31.6	30.6	30.2	30.1	28.6	29.5
29													36.5	35.8	35.7	34.0	33.7	33.1	33.8	35.3	34.2	32.8	30.7	28.8	29.9	28.6	28.0	26.6	26.5	25.4	24.1	22.8	22.8	22.4
30														30.6	29.9	30.0	28.9	28.3	28.3	27.4	29.1	28.2	26.6	25.0	23.7	23.4	22.7	22.2	21.1	20.3	19.9	18.9	18.3	17.8
31															25.0	24.5	24.9	23.9	23.1	22.9	22.8	23.3	22.1	21.1	20.0	17.6	18.5	18.0	17.4	16.3	15.7	15.2	14.3	13.9
32																20.7	20.4	20.3	19.5	19.0	19.0	18.2	18.4	18.0	17.5	15.8	14.6	14.9	14.8	13.1	12.9	12.1	11.7	11.0
33																	16.8	16.6	16.1	15.7	15.6	14.8	15.1	15.0	14.4	13.9	12.9	11.7	11.8	11.3	10.9	10.0	9.5	9.2
34																		13.7	14.1	13.7	12.9	12.6	12.1	11.9	12.6	11.9	11.6	10.2	9.3	9.5	8.8	8.6	7.9	7.8
35																			11.8	11.8	11.1	10.7	10.0	10.0	9.7	9.9	9.7	9.6	8.6	7.5	7.7	7.4	6.7	6.4
36																				9.7	8.9	8.9	8.3	8.4	8.2	8.0	7.9	8.0	7.3	7.1	6.5	6.2	5.7	5.5
37																					7.9	7.4	7.2	6.9	6.5	6.3	6.4	6.6	6.6	6.1	5.4	5.0	4.6	4.4
38																						6.3	6.1	5.9	5.8	5.5	5.3	5.0	5.3	5.1	5.0	4.7	3.9	3.5
39																							5.0	5.2	4.9	4.6	4.5	4.4	4.3	4.0	4.3	4.3	3.7	3.7
40																								4.4	4.2	4.1	3.9	3.5	3.3	3.2	3.4	3.5	3.4	3.3
41																									3.2	3.5	3.3	3.0	2.9	2.6	2.7	2.4	3.0	2.8
42																										3.0	2.7	2.7	2.5	2.3	2.3	2.2	2.3	2.4
43																											2.5	2.2	2.1	2.0	1.9	1.8	1.7	1.9
44																												1.8	1.9	1.7	1.7	1.7	1.7	1.7
45																													1.6	1.7	1.5	1.4	1.2	1.3

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A3.2 Age-Specific First Marriage Rates (per 1,000) for Female Cohorts, 1948-1982, Canada

Age	Year of Birth																																	
	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948
	Year of 15th Birthday																																		
	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963
15	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	0.6	0.6	0.5	0.6	0.6	1.1	2.0	2.4	2.4	2.7	3.5	3.4	3.3	3.5	3.5	3.2	3.3	3.4	3.4	4.1	4.2
16		0.6	0.6	0.9	1.0	1.1	1.3	1.5	1.6	1.8	2.0	2.2	2.4	3.0	3.6	3.9	4.6	4.9	5.8	6.5	7.7	9.1	11.2	13.7	15.6	17.1	18.2	17.3	17.7	16.7	15.7	16.5	16.8	17.6	19.5
17			1.7	2.1	2.4	2.6	2.8	3.1	3.8	4.7	4.6	4.9	5.5	6.0	7.5	8.3	9.5	10.9	12.5	15.0	16.8	19.3	23.2	26.9	32.4	35.3	38.9	40.9	39.2	40.6	38.6	39.7	40.8	41.0	44.8
18				7.6	8.3	9.2	9.6	10.5	11.0	13.3	15.3	16.1	16.6	18.1	21.6	24.1	25.4	29.3	33.7	38.0	44.0	48.5	53.1	60.0	66.4	75.5	79.8	84.5	89.5	82.8	82.7	82.0	81.7	84.5	88.0
19					14.5	15.3	17.2	18.8	18.3	21.2	23.5	26.3	29.4	31.5	32.5	37.5	40.2	43.4	48.3	54.8	61.6	68.0	71.8	77.0	82.8	88.3	97.8	102.8	111.2	115.5	109.3	108.7	108.6	110.3	116.5
20						22.5	24.6	26.5	28.7	29.3	31.5	36.0	41.1	45.5	46.1	48.0	50.7	56.6	59.6	64.7	72.8	77.9	83.6	86.4	89.2	92.9	93.3	104.3	111.1	118.0	125.2	121.8	121.5	126.1	132.8
21							31.6	33.9	37.3	38.9	40.0	42.4	47.6	54.6	57.8	59.8	60.1	61.7	67.2	71.4	72.4	78.4	80.4	85.0	85.9	87.6	86.8	87.1	97.5	104.1	112.3	120.5	123.1	126.7	134.6
22								39.0	41.9	45.3	47.8	48.5	51.4	56.6	64.0	65.4	66.4	64.8	67.2	70.2	71.0	71.5	73.1	75.7	75.5	76.4	73.6	74.4	74.9	82.1	85.9	91.3	96.3	96.9	105.8
23									47.3	50.5	52.1	54.1	54.8	58.1	62.5	67.2	67.3	67.3	65.2	63.3	66.6	66.0	64.4	65.1	64.3	63.9	62.4	59.9	60.4	58.7	63.7	65.5	68.0	71.0	70.6
24										52.9	53.4	57.6	56.1	56.0	57.8	59.7	65.3	65.0	62.6	59.0	56.8	57.8	56.3	53.9	53.3	50.9	50.9	48.3	46.2	45.7	44.8	48.6	48.8	49.1	49.9
25											52.0	53.8	55.0	54.7	53.4	54.5	54.9	57.6	56.9	54.9	50.8	47.5	48.4	45.8	42.8	41.6	40.7	39.6	37.1	35.6	35.1	34.4	35.7	35.4	35.1
26												48.6	48.2	49.0	48.3	45.6	45.3	47.0	48.7	46.2	43.9	39.2	38.1	38.8	36.1	34.1	32.4	30.8	29.3	28.4	26.9	27.3	26.4	26.5	25.3
27													42.0	42.0	41.3	40.7	37.6	37.9	38.3	39.6	36.2	35.3	32.0	29.6	29.3	28.2	26.0	25.2	23.9	23.7	21.5	21.0	20.4	19.9	19.6
28														35.2	35.0	33.1	31.9	30.9	31.4	30.4	31.4	29.5	27.5	25.3	22.1	22.7	22.0	20.2	19.2	18.2	17.5	16.4	15.9	15.2	14.7
29															28.9	27.2	27.1	26.0	25.8	24.4	24.0	24.8	23.3	22.2	19.7	17.2	17.8	16.8	15.9	15.3	14.5	13.6	12.6	12.2	11.8
30																22.7	22.1	21.7	20.5	20.0	19.9	19.1	19.6	18.9	16.8	15.3	13.8	14.1	13.6	12.2	11.7	11.2	10.6	9.7	9.3
31																	17.3	17.3	16.7	16.1	16.0	15.5	14.5	15.2	14.0	13.2	11.4	10.4	10.5	10.3	9.5	8.8	8.5	7.7	7.4
32																		14.1	13.8	14.0	13.4	12.5	12.1	11.8	12.0	11.1	10.2	9.1	7.8	8.2	7.8	7.5	7.0	6.4	6.1
33																			11.6	11.2	11.1	10.2	10.1	9.9	9.4	9.1	8.8	8.1	7.2	6.5	6.7	6.4	5.8	5.4	5.4
34																				9.2	9.0	9.1	8.3	8.5	8.1	7.9	7.5	6.9	6.3	5.7	5.4	5.4	5.1	4.5	4.3
35																					7.5	7.2	7.3	7.0	6.6	6.4	6.3	6.1	5.7	5.4	5.1	4.2	4.2	3.9	3.6
36																						6.2	5.9	5.7	5.3	5.1	4.8	5.1	4.8	4.6	4.4	3.8	3.4	3.3	2.9
37																							5.0	4.8	4.6	4.2	4.2	4.0	3.7	3.8	3.7	3.5	3.2	2.6	2.5
38																								3.9	4.0	3.8	3.2	3.6	3.3	3.1	2.8	3.1	2.8	2.5	2.3
39																									3.3	3.2	3.0	2.8	2.8	2.6	2.6	2.6	2.6	2.2	2.1
40																										2.5	2.8	2.5	2.4	2.2	2.3	2.2	2.0	2.0	2.0
41																											2.2	1.9	1.8	1.8	1.9	1.7	1.7	1.6	1.6
42																												1.9	1.7	1.7	1.6	1.4	1.6	1.5	1.5
43																													1.4	1.4	1.4	1.4	1.2	1.3	1.1
44																														1.2	1.2	1.1	1.0	1.2	0.9
45																															1.1	1.1	1.0	0.9	0.8

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A4. Divorce

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[2]	Canada
	Number of Divorces												
1981	569	187	2,285	1,334	19,193	21,680	2,399	1,932	8,418	9,533	75	66	67,671
1986	687	199	2,609	1,729	19,026	27,549	2,982	2,479	9,556	11,299	94	95	78,304
1987	1,117	275	2,759	1,995	22,098	39,095	3,923	2,968	9,535	12,184	142	109	96,200
1988	906	269	2,494	1,673	20,340	32,524	3,102	2,501	8,744	10,760	82	112	83,507
1989	1,005	248	2,527	1,649	19,829	31,298	2,912	2,460	8,237	10,658	82	93	80,998
1990	1,016	281	2,419	1,699	20,474	28,977	2,798	2,364	8,489	9,773	81	92	78,463
1991	912	269	2,280	1,652	20,274	27,694	2,790	2,240	8,388	10,368	67	86	77,020
1992	867	227	2,304	1,633	19,695	30,463	2,657	2,325	8,217	10,431	117	98	79,034
1993	930	227	2,376	1,606	19,662	28,903	2,586	2,239	8,612	10,889	94	102	78,226
1994	933	249	2,286	1,570	18,224	30,718	2,746	2,354	8,174	11,437	97	92	78,880
1995	982	260	2,294	1,456	20,133	29,352	2,677	2,320	7,599	10,357	112	94	77,636
1996	1,060	237	2,228	1,450	18,078	25,035	2,603	2,216	7,509	10,898	115	99	71,528
1997	822	243	1,983	1,373	17,478	23,629	2,625	2,198	7,185	9,692	101	79	67,408
	Mean Duration of Marriage for Persons Divorced in the Year[1]												
1981	11.8	12.4	11.3	11.8	11.8	11.9	11.0	10.5	10.5	11.7	11.2	9.0	11.5
1986	11.7	12.5	11.3	11.8	11.5	11.7	11.1	10.7	10.9	12.1	11.8	10.9	11.5
1987	11.3	11.7	11.1	11.7	11.3	11.6	10.5	10.4	10.9	11.8	11.7	11.0	11.4
1988	11.7	12.4	11.0	11.7	11.1	11.5	10.6	10.6	11.0	11.7	11.4	10.4	11.3
1989	11.7	11.5	11.3	11.5	11.0	11.3	10.3	10.8	11.0	11.5	11.5	10.5	11.2
1990	11.3	11.9	11.3	11.1	10.8	11.2	10.5	10.6	11.0	11.5	11.4	10.1	11.1
1991	11.4	12.8	11.0	11.4	11.0	10.9	10.3	10.8	10.8	11.3	11.1	9.0	11.0
1992	10.9	12.0	11.2	11.0	10.7	10.9	10.4	10.6	10.8	11.1	10.7	9.3	10.9
1993	11.7	11.8	10.9	11.5	10.5	10.8	10.4	10.6	10.6	10.9	10.6	10.0	10.7
1994	11.3	12.4	11.0	11.1	10.6	10.6	10.4	10.5	10.6	10.7	10.8	10.7	10.7
1995	11.2	12.1	11.1	11.5	10.4	10.8	10.5	10.6	10.8	10.6	10.1	10.1	10.7
1996	11.3	12.2	11.3	11.5	10.4	11.0	10.5	10.6	10.5	10.6	10.2	10.0	10.8
1997	12.0	11.7	11.4	11.4	10.7	10.9	10.5	10.3	10.7	10.7	11.0	9.4	10.9

[1] Excludes divorces for marriages of a duration greater than 25 years.
[2] Nunavut included.
Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A5. Duration-Specific Divorce Rate (per 10,000), Canada, Marriage Cohorts 1945-1946 to 1996-1997

Year	Number of Marriages per Year	Marriage Cohort	Cohort Marriages	Marriage Duration (in years)																										Year of Obser-vation	T.D.R.[1]
				0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
1947	130,400	1946-47	133,899																							48	55	49	46	1972	2,004
1948	126,118	1947-48	128,259																						47	56	50	50	54	1973	2,231
1949	124,087	1948-49	125,103																					50	58	56	52	60	58	1974	2,670
1950	125,083	1949-50	124,585																				51	60	55	58	59	68	64	1975	2,932
1951	128,408	1950-51	126,746																			51	64	61	59	60	73	69	71	1976	3,072
1952	128,474	1951-52	128,441																		53	65	63	62	63	74	74	76	69	1977	3,063
1953	131,034	1952-53	129,754																	54	69	70	64	67	75	80	76	69	55	1978	3,108
1954	128,629	1953-54	129,832																50	74	64	62	71	86	82	78	75	70	62	1979	3,180
1955	128,029	1954-55	128,329															57	73	65	68	69	85	85	83	75	70	68	65	1980	3,275
1956	132,713	1955-56	130,371														59	83	71	73	77	87	90	90	89	78	74	69	72	1981	3,525
1957	133,186	1956-57	132,950													67	82	76	75	78	92	105	96	87	85	84	75	75	66	1982	3,653
1958	131,525	1957-58	132,356												61	79	81	81	83	91	101	97	92	84	82	78	77	72	63	1983	3,518
1959	132,722	1958-59	132,124											68	91	82	80	86	96	105	103	92	89	80	77	84	77	68	67	1984	3,304
1960	130,338	1959-60	131,530										70	93	95	91	97	111	111	110	100	95	90	84	90	87	76	67	64	1985	3,118
1961	128,475	1960-61	129,407									73	97	95	95	97	119	119	116	108	100	95	95	95	94	81	78	64	80	1986	3,908
1962	129,381	1961-62	128,928								71	105	99	106	103	121	133	123	115	108	97	96	98	106	88	78	71	83	91	1987	4,788
1963	131,111	1962-63	130,246							71	114	113	112	114	131	133	134	124	118	104	99	108	105	91	86	79	88	102	81	1988	4,139
1964	138,135	1963-64	134,623						68	106	109	113	124	142	136	140	128	126	114	110	113	109	100	92	83	101	111	93	76	1989	3,996
1965	145,519	1964-65	141,827					61	98	112	121	134	150	153	153	139	134	124	117	118	115	104	97	92	104	123	92	83	76	1990	3,841
1966	155,596	1965-66	150,558				42	93	112	128	143	156	162	163	148	137	130	123	121	115	113	101	93	108	124	104	91	84	72	1991	3,707
1967	165,879	1966-67	160,738			31	68	102	126	139	166	177	171	155	145	136	131	132	128	118	106	94	112	132	114	97	85	78	69	1992	3,786
1968	171,766	1967-68	168,823		17	49	75	115	142	162	183	173	165	156	151	137	138	137	117	109	97	116	133	112	108	92	81	81	67	1993	3,768
1969	182,183	1968-69	176,975	3	22	53	83	122	158	182	184	171	165	160	153	148	146	133	112	103	121	139	118	106	98	89	82	73	68	1994	3,800
1970	188,428	1969-70	185,306	3	25	55	92	151	177	192	192	176	174	165	163	159	139	127	112	121	147	118	113	100	94	85	76	71	70	1995	3,761
1971	191,324	1970-71	189,876	4	28	61	106	161	186	189	191	184	180	173	166	151	132	115	129	151	121	113	101	93	90	84	81	77	62	1996	3,463

Year	Number of Marriages per Year	Marriage Cohort	Cohort Marriages	Marriage Duration (in years)																										Year of Obser-vation	T.D.R.[1]
				0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
1972	200,470	1971-72	195,897	4	33	74	117	174	193	196	197	191	188	186	169	145	126	145	159	131	122	111	98	97	83	87	80	72	64	1997	3,270
1973	199,064	1972-73	199,767	5	36	83	129	181	203	212	211	206	204	180	155	135	152	175	138	126	111	103	99	93	89	83	74	71			
1974	198.824	1973-74	198,944	5	44	94	136	184	213	227	229	218	189	168	146	160	184	149	129	111	106	104	97	87	89	78	70				
1975	198,085	1974-75	198,455	6	52	104	147	199	224	242	233	214	185	163	171	196	150	139	130	110	110	102	93	90	82	77					
1976	193,343	1975-76	195,714	8	59	111	161	217	251	246	227	194	165	195	207	165	152	131	119	113	112	103	98	86	80						
1977	187,344	1976-77	190,344	8	63	116	162	227	250	240	208	180	200	225	181	158	143	125	117	113	105	100	88	82							
1978	185,523	1977-78	186,434	7	65	123	175	235	250	221	200	230	248	196	175	155	135	130	116	107	107	90	80								
1979	187,811	1978-79	186.667	8	58	132	185	226	226	211	252	274	211	185	164	148	140	126	118	114	97	88									
1980	191,069	1979-80	189,440	7	65	135	176	206	210	268	297	227	207	184	165	148	142	131	118	105	92										
1981	190,082	1980-81	190,576	8	71	133	154	190	269	316	250	218	189	179	161	150	134	129	110	105											
1982	188,360	1981-82	189,221	9	65	118	144	260	326	263	232	216	190	177	160	153	135	119	104												
1983	184,675	1982-83	186,518	8	64	109	209	322	273	247	219	197	183	172	158	140	128	111													
1984	185,597	1983-84	185,136	8	63	150	270	263	253	237	209	202	184	171	151	135	117														
1985	184,096	1984-85	184,847	8	72	212	249	260	251	226	219	201	187	170	146	123															
1986	175,518	1985-86	179,807	10	103	217	265	263	246	237	222	203	182	163	143																
1987	182,151	1986-87	178,835	20	106	216	251	255	251	235	218	196	171	149																	
1988	187,728	1987-88	184,940	19	106	214	248	254	243	237	216	175	158																		
1989	190,640	1988-89	189,184	19	109	208	265	268	256	231	193	170																			
1990	187,737	1989-90	189,189	17	113	230	272	270	257	213	181																				
1991	172,251	1990-91	179,994	19	120	232	276	274	232	205																					
1992	164,573	1991-92	168,412	21	121	242	270	246	216																						
1993	159,317	1992-93	161,945	22	132	236	246	228																							
1994	159,958	1993-94	159,638	22	129	222	230																								
1995	160,251	1994-95	160,105	20	113	203																									
1996	156,691	1995-96	158,471	16	106																										
1997	153,306	1996-97	154,999	16																											

[1] Total Divorce Rate.

Sources: Statistics Canada, Health Statistics Division and Demography Division, Population Estimates Section.

Table A6. Births and Fertility

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]	Canada
	Live Births												
1981	10,130	1,897	12,079	10,503	95,322	122,183	16,073	17,209	42,638	41,474	536	1,302	371,346
1986	8,100	1,925	12,353	9,787	84,604	133,875	17,008	17,513	43,741	41,965	483	1,504	372,858
1987	7,769	1,954	12,104	9,587	83,761	134,613	16,952	17,034	42,105	41,812	478	1,520	369,689
1988	7,487	1,976	12,176	9,616	86,590	138,060	17,030	16,763	42,053	42,930	521	1,553	376,755
1989	7,762	1,937	12,530	9,666	92,354	145,327	17,321	16,651	43,351	43,768	480	1,478	392,625
1990	7,604	2,014	12,864	9,819	98,015	150,909	17,350	16,090	43,002	45,614	556	1,580	405,417
1991	7,166	1,885	12,016	9,497	97,310	151,478	17,282	15,304	42,776	45,612	568	1,634	402,528
1992	6,918	1,850	11,874	9,389	96,146	150,593	16,590	15,004	42,039	46,156	529	1,554	398,642
1993	6,421	1,754	11,568	9,049	92,391	147,848	16,709	14,269	40,292	46,026	508	1,559	388,394
1994	6,339	1,716	11,099	8,978	90,578	147,068	16,480	14,038	39,796	46,998	442	1,580	385,112
1995	5,859	1,754	10,726	8,563	87,417	146,263	16,113	13,499	38,914	46,820	470	1,613	378,011
1996	5,747	1,694	10,573	8,176	85,226	140,012	15,478	13,300	37,851	46,138	443	1,562	366,200
1997	5,416	1,591	9,952	7,922	79,774	133,004	14,655	12,860	36,905	44,577	474	1,468	348,598
	Age-Specific Fertility Rates (per 1,000)												
1995: 15-19	23.9	30.3	27.7	31.9	17.0	22.4	42.3	42.5	32.1	22.2	37.3	102.5	24.3
20-24	66.8	80.3	74.6	80.0	73.2	61.7	94.8	102.4	85.7	70.2	95.4	158.1	71.9
25-29	90.6	125.4	102.9	104.8	119.1	109.6	125.3	128.8	118.7	103.6	107.2	141.5	112.5
30-34	58.1	90.6	72.0	64.5	82.8	96.4	91.1	81.1	86.6	86.5	85.0	100.4	88.0
35-39	14.9	26.1	23.0	17.4	26.1	37.4	31.9	24.4	31.1	33.9	31.6	40.9	31.5
40-44	1.4	4.1	2.9	2.3	3.9	5.9	4.7	3.4	4.4	5.7	6.9	8.8	4.9
45-49	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.0	1.2	0.2
1996: 15-19	23.6	29.8	28.0	26.8	16.3	19.9	40.1	39.5	28.2	19.1	32.7	99.4	22.1
20-24	63.7	79.8	72.1	76.7	72.1	57.8	92.6	96.9	79.2	65.0	87.0	165.0	68.4
25-29	92.0	121.0	100.8	102.4	118.4	104.5	120.5	129.9	115.3	99.2	96.8	134.4	109.1
30-34	63.0	84.2	74.5	65.1	81.7	94.5	89.6	81.3	87.6	85.3	76.9	91.1	87.0
35-39	16.4	29.1	24.6	18.8	27.3	38.4	30.8	26.7	32.5	34.8	33.3	39.8	32.6
40-44	1.9	2.4	3.3	2.3	3.9	6.1	5.4	3.9	5.0	6.1	7.2	10.6	5.1
45-49	0.0	0.6	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.8	0.6	0.2
1997: 15-19	22.6	28.7	23.7	25.4	15.5	17.1	36.1	37.2	25.9	17.4	31.1	89.1	20.0
20-24	59.1	76.8	68.7	76.0	67.0	53.7	85.7	94.9	75.1	59.4	90.7	158.6	64.0
25-29	90.6	111.0	98.5	101.2	111.7	98.6	116.1	124.2	112.3	94.3	115.2	130.1	103.8
30-34	61.5	75.1	71.5	64.9	79.5	91.2	87.2	79.1	85.0	83.1	81.6	85.3	84.4
35-39	17.3	27.6	24.4	17.1	26.5	38.1	33.1	27.0	32.4	35.7	37.3	42.5	32.5
40-44	2.1	6.2	3.1	2.4	3.9	6.3	4.8	4.0	5.6	6.0	7.7	7.8	5.2
45-49	0.2	0.0	0.2	0.0	0.1	0.2	0.3	0.4	0.1	0.3	0.0	0.0	0.2

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]	Canada
	Fertlity Rates by Birth Order (per 1,000 women)												
1995: 1	19.8	23.3	22.3	22.7	22.9	24.6	26.6	23.5	24.2	25.0	26.0	33.0	24.0
2	15.4	19.3	17.8	17.8	19.0	20.6	20.0	20.0	20.7	18.5	19.2	26.7	19.6
3	4.9	10.2	6.8	6.1	7.4	8.2	10.3	10.6	9.3	7.1	7.8	17.9	8.0
4	1.4	3.9	2.3	1.7	2.1	2.5	4.1	4.2	3.3	2.2	4.0	9.4	2.5
5 +	0.6	1.7	0.9	0.7	1.0	1.4	3.3	3.3	2.0	1.1	2.1	10.7	1.4
1996: 1	20.1	23.2	22.3	21.6	22.6	23.4	25.7	23.1	22.9	23.5	25.8	31.4	23.1
2	16.0	19.4	17.5	16.8	18.4	19.8	19.4	19.3	20.2	18.1	17.1	26.4	19.0
3	4.7	9.1	7.0	6.4	7.2	7.8	9.7	10.6	9.0	6.9	7.0	15.8	7.7
4	1.3	3.3	1.8	1.6	2.1	2.4	4.0	4.4	3.2	2.2	2.9	9.9	2.5
5 +	0.4	1.4	0.9	0.6	1.0	1.3	3.1	3.2	2.1	1.0	1.5	10.6	1.4
1997: 1	19.7	22.8	21.0	21.4	21.5	21.9	24.1	22.0	22.2	22.1	24.6	29.1	21.9
2	15.0	17.6	16.9	16.7	17.4	18.8	18.9	18.5	19.3	17.7	20.9	24.7	18.2
3	4.5	8.9	6.3	5.8	6.6	7.4	9.1	10.3	8.3	6.4	8.2	14.3	7.2
4	1.1	2.0	1.8	1.6	1.9	2.2	3.7	4.3	3.1	2.0	3.2	9.1	2.3
5 +	0.6	1.4	0.9	0.6	0.9	1.2	3.1	3.2	2.0	1.0	1.4	11.3	1.3
	Total Fertlity Rate (women aged 15-49)[2]												
1981	..	1.88	1.62	1.68	1.57	1.58	1.83	2.12	1.87	1.64	2.07	2.86	1.65
1986	..	1.79	1.59	1.53	1.38	1.60	1.83	2.03	1.86	1.62	1.95	2.85	1.60
1987	1.53	1.83	1.56	1.51	1.37	1.58	1.83	1.99	1.83	1.62	1.90	2.86	1.58
1988	1.48	1.86	1.58	1.53	1.43	1.60	1.85	2.00	1.85	1.65	2.00	2.94	1.61
1989	1.54	1.84	1.63	1.56	1.53	1.64	1.92	2.06	1.92	1.66	1.87	2.73	1.67
1990	1.52	1.94	1.68	1.59	1.64	1.68	1.95	2.08	1.90	1.70	2.19	2.83	1.72
1991	1.44	1.86	1.59	1.55	1.65	1.67	1.97	2.04	1.90	1.69	2.15	2.88	1.71
1992	1.40	1.85	1.59	1.56	1.67	1.69	1.93	2.04	1.88	1.68	1.93	2.70	1.71
1993	1.32	1.76	1.57	1.53	1.64	1.67	1.97	1.98	1.82	1.64	1.89	2.69	1.69
1994	1.34	1.73	1.54	1.55	1.64	1.67	1.97	1.97	1.82	1.64	1.73	2.73	1.69
1995	1.28	1.79	1.52	1.51	1.61	1.67	1.95	1.91	1.79	1.61	1.82	2.77	1.67
1996	1.30	1.73	1.52	1.46	1.60	1.61	1.90	1.89	1.74	1.55	1.67	2.70	1.62
1997	1.27	1.63	1.45	1.44	1.52	1.53	1.82	1.83	1.68	1.48	1.82	2.57	1.55

[1] Nunavut included

[2] Number of children per woman.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A7. Age-Specific Fertility and Total Fertility Rates by Birth Order and Age of Mother for Quebec and Rest of Canada[1], 1981-1997

Birth Order	Year	15-19		20-24		25-29		30-34		35-39		40-44		Total Fertility Rate		
		Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Canada
1	1981	12.89	24.98	55.16	53.22	54.14	47.89	16.32	16.99	3.43	3.64	0.54	0.48	0.7124	0.7360	0.7296
	1986	13.01	21.16	47.20	46.09	49.85	48.42	17.49	20.57	4.42	5.03	0.50	0.66	0.6624	0.7096	0.6975
	1987	13.47	20.51	45.69	44.25	50.95	47.73	18.50	20.91	4.45	5.40	0.66	0.72	0.6685	0.6976	0.6904
	1988	13.92	20.89	48.52	44.40	54.18	49.81	19.25	22.18	4.71	6.05	0.69	0.77	0.7064	0.7205	0.7172
	1989	14.86	22.29	51.09	45.59	57.95	50.49	21.45	23.55	5.19	6.29	0.64	0.85	0.7559	0.7453	0.7482
	1990	15.66	22.94	53.49	45.75	60.65	52.95	23.54	25.20	5.64	6.87	0.66	0.89	0.7981	0.7730	0.7794
	1991	14.93	23.67	52.62	44.41	61.47	51.22	24.25	24.97	6.20	6.99	0.73	0.93	0.8011	0.7610	0.7709
	1992	15.08	22.89	49.24	42.46	60.41	51.41	24.80	26.05	6.10	7.31	0.78	0.99	0.7821	0.7555	0.7616
	1993	14.69	22.31	47.70	41.72	56.78	50.70	24.75	27.02	6.29	7.70	0.86	1.11	0.7553	0.7528	0.7527
	1994	14.89	22.30	46.99	40.74	54.50	50.84	24.57	27.99	6.55	7.94	0.89	1.19	0.7419	0.7550	0.7510
	1995	14.29	21.92	45.30	40.07	53.94	49.35	25.42	28.95	6.52	8.37	1.00	1.23	0.7324	0.7495	0.7445
	1996	13.89	19.72	44.88	37.41	54.54	48.17	25.23	28.70	6.93	8.86	0.87	1.33	0.7317	0.7210	0.7226
	1997	13.15	17.50	41.38	34.91	51.99	46.19	25.12	28.17	6.96	8.84	0.99	1.38	0.6979	0.6849	0.6874
2	1981	1.62	4.51	24.13	31.50	52.90	47.19	27.69	25.24	6.11	5.83	0.58	0.62	0.5652	0.5745	0.5719
	1986	1.66	3.88	18.89	27.32	46.14	47.64	25.15	30.68	5.71	8.16	0.67	0.81	0.4911	0.5924	0.5656
	1987	1.86	4.05	19.25	26.05	44.08	46.67	25.44	31.30	6.06	8.79	0.68	0.96	0.4869	0.5890	0.5620
	1988	1.78	3.77	19.66	25.57	44.19	45.26	27.17	31.47	6.76	9.27	0.83	1.12	0.5020	0.5823	0.5612
	1989	1.93	4.08	20.75	25.33	45.51	45.00	28.66	32.44	7.05	9.63	0.73	1.10	0.5232	0.5879	0.5711
	1990	2.21	4.16	21.96	24.99	49.14	44.74	31.51	33.89	7.97	10.15	0.91	1.20	0.5684	0.5957	0.5886
	1991	2.10	4.32	22.29	24.48	48.52	43.82	32.14	33.28	7.80	10.40	0.88	1.20	0.5686	0.5875	0.5828
	1992	2.36	4.59	22.23	24.30	49.69	43.77	33.40	34.89	8.69	10.76	0.94	1.41	0.5865	0.5986	0.5956
	1993	2.31	4.52	22.42	23.33	48.47	42.35	33.95	34.19	8.77	11.23	1.11	1.43	0.5852	0.5853	0.5850
	1994	2.28	4.46	22.00	22.90	48.59	41.70	34.86	34.92	9.22	11.67	1.07	1.53	0.5901	0.5859	0.5866
	1995	2.36	4.20	21.30	22.54	45.56	40.07	34.77	35.81	9.64	11.96	1.19	1.59	0.5741	0.5809	0.5788
	1996	2.12	3.65	20.93	21.25	44.22	38.35	34.19	35.82	10.41	12.71	1.26	1.70	0.5656	0.5673	0.5664
	1997	2.09	3.44	19.60	20.04	41.83	36.82	33.48	35.02	10.01	12.95	1.17	1.83	0.5409	0.5505	0.5477
3	1981	0.16	0.44	4.44	8.39	17.33	19.74	16.62	15.83	4.57	4.80	0.56	0.69	0.2184	0.2494	0.2408
	1986	0.18	0.48	3.39	7.49	13.12	19.28	12.26	17.67	4.30	6.05	0.57	0.74	0.1691	0.2586	0.2347
	1987	0.18	0.43	3.52	7.32	12.22	18.62	11.64	17.64	3.88	6.34	0.57	0.76	0.1601	0.2555	0.2301
	1988	0.18	0.48	3.58	7.24	12.43	18.31	12.20	17.88	4.07	6.74	0.52	0.84	0.1649	0.2575	0.2330
	1989	0.22	0.49	4.30	7.28	13.91	17.81	13.86	18.44	4.61	7.09	0.65	0.96	0.1878	0.2603	0.2413
	1990	0.17	0.50	4.53	7.19	15.09	17.30	15.14	18.36	5.20	7.25	0.58	0.91	0.2036	0.2576	0.2436
	1991	0.19	0.51	4.64	7.11	15.13	16.91	15.73	18.54	5.44	7.19	0.68	0.92	0.2090	0.2559	0.2441
	1992	0.24	0.60	5.01	7.09	15.49	16.46	16.64	17.98	5.63	7.31	0.81	0.94	0.2191	0.2519	0.2438
	1993	0.25	0.56	5.36	7.00	15.03	15.50	16.07	17.68	5.58	7.16	0.73	0.97	0.2151	0.2444	0.2371
	1994	0.29	0.57	5.30	7.07	15.57	15.10	16.17	16.96	5.85	7.31	0.82	1.06	0.2200	0.2404	0.2354
	1995	0.33	0.54	5.31	6.69	14.93	14.53	16.06	16.66	5.97	7.41	0.80	1.09	0.2170	0.2346	0.2303
	1996	0.24	0.54	5.14	6.46	14.58	13.75	15.82	16.20	6.04	7.47	0.84	1.10	0.2133	0.2276	0.2240
	1997	0.17	0.44	4.77	6.11	13.33	12.74	14.80	15.36	5.75	7.38	0.74	1.12	0.1978	0.2158	0.2113

Birth Order	Year	15-19		20-24		25-29		30-34		35-39		40-44		Total Fertility Rate		
		Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Canada
4	1981	0.01	0.05	0.54	1.59	2.94	5.31	4.48	5.68	2.23	2.64	0.43	0.50	0.0531	0.0788	0.0717
	1986	0.02	0.03	0.48	1.49	2.40	5.19	3.33	5.97	1.70	2.83	0.37	0.49	0.0415	0.0800	0.0697
	1987	0.02	0.04	0.50	1.52	2.22	5.04	3.20	5.73	1.68	2.87	0.35	0.46	0.0398	0.0783	0.0680
	1988	0.02	0.05	0.55	1.50	2.41	4.97	3.07	5.79	1.69	2.91	0.43	0.49	0.0409	0.0786	0.0686
	1989	0.01	0.05	0.58	1.59	2.61	4.90	3.65	6.14	1.68	3.07	0.35	0.57	0.0443	0.0816	0.0718
	1990	0.00	0.04	0.76	1.67	2.80	4.77	3.95	6.03	2.24	3.11	0.35	0.54	0.0505	0.0808	0.0729
	1991	0.01	0.05	0.82	1.68	3.23	4.73	4.18	6.04	2.11	3.21	0.37	0.49	0.0536	0.0810	0.0741
	1992	0.03	0.06	0.92	1.71	3.15	4.61	4.37	5.89	2.20	3.03	0.42	0.53	0.0554	0.0791	0.0732
	1993	0.02	0.05	0.83	1.61	3.11	4.41	4.54	5.74	2.24	3.17	0.45	0.56	0.0559	0.0777	0.0723
	1994	0.02	0.06	1.14	1.64	3.51	4.40	4.81	5.58	2.52	3.05	0.49	0.57	0.0625	0.0765	0.0731
	1995	0.03	0.06	1.06	1.64	3.56	4.43	4.65	5.30	2.38	3.18	0.48	0.56	0.0607	0.0758	0.0722
	1996	0.02	0.07	0.97	1.64	3.86	4.03	4.52	5.18	2.45	3.08	0.40	0.64	0.0611	0.0732	0.0703
	1997	0.04	0.04	1.02	1.55	3.23	3.88	4.26	4.71	2.36	3.00	0.50	0.59	0.0570	0.0688	0.0660
5 +	1981	0.00	0.01	0.12	0.35	0.77	1.83	1.54	3.17	1.54	2.60	0.57	0.93	0.0227	0.0444	0.0383
	1986	0.00	0.00	0.09	0.37	0.68	1.82	1.29	2.84	1.07	2.08	0.36	0.65	0.0175	0.0388	0.0330
	1987	0.00	0.01	0.11	0.35	0.64	1.86	1.17	2.88	0.94	2.19	0.34	0.71	0.0160	0.0400	0.0335
	1988	0.00	0.00	0.09	0.38	0.63	1.72	1.31	2.98	1.18	2.11	0.40	0.68	0.0180	0.0394	0.0337
	1989	0.00	0.00	0.13	0.41	0.77	1.77	1.60	2.88	1.30	2.15	0.35	0.63	0.0207	0.0392	0.0343
	1990	0.01	0.01	0.15	0.44	0.77	1.92	1.51	2.92	1.30	2.27	0.39	0.67	0.0206	0.0412	0.0358
	1991	0.00	0.00	0.14	0.44	0.81	1.96	1.62	3.00	1.38	2.26	0.37	0.64	0.0216	0.0416	0.0365
	1992	0.00	0.02	0.21	0.44	0.97	2.02	1.69	2.99	1.32	2.30	0.38	0.69	0.0228	0.0423	0.0374
	1993	0.00	0.02	0.17	0.48	0.95	1.99	1.80	2.96	1.48	2.23	0.47	0.65	0.0244	0.0417	0.0374
	1994	0.00	0.04	0.19	0.55	1.16	2.09	1.81	2.97	1.39	2.23	0.46	0.68	0.0250	0.0428	0.0384
	1995	0.00	0.02	0.20	0.52	1.08	2.11	1.91	2.88	1.63	2.35	0.47	0.70	0.0264	0.0429	0.0389
	1996	0.00	0.02	0.21	0.53	1.23	2.02	1.94	2.79	1.50	2.23	0.57	0.71	0.0272	0.0415	0.0381
	1997	0.00	0.01	0.21	0.44	1.30	1.87	1.85	2.67	1.43	2.31	0.48	0.71	0.0263	0.0401	0.0368
All Orders	1981	14.69	29.99	84.40	95.06	128.08	121.96	66.65	66.90	17.88	19.51	2.67	3.22	1.5718	1.6832	1.6523
	1986	14.86	25.56	70.05	82.75	112.18	122.34	59.52	77.74	17.20	24.16	2.48	3.36	1.3814	1.6795	1.6005
	1987	15.53	25.03	69.07	79.48	110.12	119.93	59.95	78.45	17.01	25.59	2.59	3.61	1.3713	1.6605	1.5840
	1988	15.90	25.19	72.39	79.08	113.84	120.07	63.00	80.31	18.41	27.08	2.87	3.90	1.4321	1.6782	1.6136
	1989	17.03	26.91	76.85	80.20	120.75	119.96	69.22	83.46	19.82	28.23	2.72	4.11	1.5320	1.7144	1.6668
	1990	18.06	27.66	80.88	80.04	128.43	121.68	75.65	86.41	22.35	29.65	2.89	4.21	1.6413	1.7483	1.7204
	1991	17.22	28.56	80.52	78.12	129.16	118.64	77.91	85.84	22.93	30.06	3.03	4.19	1.6538	1.7270	1.7083
	1992	17.72	28.15	77.60	76.01	129.71	118.26	80.89	87.81	23.94	30.71	3.33	4.56	1.6660	1.7275	1.7116
	1993	17.26	27.46	76.48	74.15	124.34	114.96	81.12	87.58	24.36	31.50	3.63	4.73	1.6360	1.7018	1.6846
	1994	17.46	27.43	75.61	72.91	123.34	114.13	82.21	88.43	25.52	32.19	3.73	5.02	1.6394	1.7006	1.6844
	1995	17.01	26.75	73.17	71.46	119.06	110.48	82.81	89.61	26.14	33.27	3.94	5.17	1.6106	1.6837	1.6647
	1996	16.27	24.01	72.13	67.29	118.42	106.32	81.69	88.68	27.33	34.35	3.94	5.47	1.5989	1.6306	1.6215
	1997	15.45	21.42	66.99	63.07	111.67	101.50	79.50	85.93	26.51	34.47	3.88	5.63	1.5200	1.5601	1.5492

[1] Excluding Newfoundland before 1991.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A8. Mortality

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]	Canada
	Deaths												
1981	3,230	992	6,958	5,139	42,684	62,838	8,648	7,523	12,823	19,857	141	196	171,029
1986	3,540	1,121	7,255	5,458	46,892	67,865	8,911	8,061	13,560	21,213	113	235	184,224
1987	3,629	1,115	7,112	5,408	47,616	68,119	8,710	7,808	13,316	21,814	108	197	184,952
1988	3,591	1,112	7,412	5,450	47,771	70,679	9,100	8,100	13,894	22,546	136	220	190,011
1989	3,718	1,089	7,516	5,496	48,305	70,907	8,819	7,920	13,854	22,997	95	249	190,965
1990	3,884	1,143	7,388	5,426	48,420	70,818	8,863	8,044	14,068	23,577	115	227	191,973
1991	3,798	1,188	7,255	5,469	49,121	72,917	8,943	8,098	14,451	23,977	114	237	195,568
1992	3,798	1,114	7,544	5,609	48,824	73,206	8,980	7,793	14,679	24,615	117	256	196,535
1993	3,890	1,145	7,559	5,806	51,711	75,853	9,299	8,164	15,338	25,764	123	260	204,912
1994	4,050	1,114	7,770	5,917	51,366	77,487	9,148	8,308	15,613	25,939	124	241	207,077
1995	3,935	1,153	7,687	5,938	52,734	78,479	9,658	8,495	15,895	26,375	157	227	210,733
1996	3,928	1,268	7,751	5,896	52,336	79,099	9,497	8,765	16,391	27,536	120	272	212,859
1997	4,318	1,030	8,044	5,944	54,399	79,541	9,511	8,637	16,452	27,412	123	258	215,669
	Infant Deaths (age less than 1 year)												
1981	98	25	139	114	807	1,073	191	203	452	424	8	28	3,562
1986	65	13	104	81	604	969	157	157	393	355	12	28	2,938
1987	59	13	90	67	594	888	142	155	315	359	5	19	2,706
1988	70	14	79	69	563	910	132	140	347	362	3	16	2,705
1989	64	12	73	69	632	985	115	134	325	360	2	24	2,795
1990	70	12	81	71	612	946	138	123	346	344	4	19	2,766
1991	56	13	69	58	578	953	111	126	285	298	6	20	2,573
1992	49	3	71	59	522	886	113	110	304	286	2	26	2,431
1993	50	16	82	65	529	922	118	115	268	264	4	15	2,448
1994	52	11	67	48	506	878	115	125	294	297	1	23	2,417
1995	46	8	52	41	477	870	123	123	274	280	6	21	2,321
1996	38	8	59	40	396	802	104	112	236	237	0	19	2,051
1997	28	7	44	45	444	728	110	114	178	210	4	16	1,928

[1] Nunavut included.

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

Table A9. Life Expectancy at Different Ages (Triennial Tables), Canada, 1971 to 1997

Year	1971	1976	1981	1986	1991	1995	1996	1997[1]
	Males							
0	69.58	70.47	72.03	73.29	74.61	75.21	75.45	75.78
1	70.00	70.49	71.82	72.92	74.14	74.71	74.92	75.22
5	66.25	66.71	67.99	69.05	70.25	70.80	71.01	71.31
10	61.43	61.86	63.10	64.14	65.32	65.86	66.07	66.37
15	56.58	56.99	58.22	59.23	60.40	60.93	61.14	61.44
20	51.97	52.39	53.57	54.52	55.66	56.16	56.36	56.66
25	47.40	47.83	48.95	49.85	50.96	51.43	51.63	51.93
30	42.72	43.15	44.26	45.12	46.24	46.70	46.88	47.16
35	38.04	38.46	39.53	40.40	41.53	41.98	42.16	42.42
40	33.42	33.83	34.85	35.69	36.86	37.31	37.47	37.71
45	28.96	29.34	30.28	31.07	32.22	32.70	32.84	33.07
50	24.71	25.08	25.92	26.62	27.73	28.17	28.31	28.52
55	20.75	21.10	21.83	22.42	23.43	23.84	23.96	24.15
60	17.11	17.45	18.06	18.54	19.44	19.75	19.86	20.03
65	13.87	14.17	14.65	15.01	15.81	16.02	16.09	16.25
70	11.05	11.26	11.66	11.90	12.55	12.69	12.73	12.87
75	8.62	8.78	9.07	9.22	9.71	9.77	9.79	9.92
80	6.59	6.72	6.92	6.99	7.36	7.33	7.31	7.38
85	5.04	5.17	5.22	5.20	5.53	5.41	5.36	5.45
90	3.92	4.30	3.95	3.82	4.28	4.07	3.94	4.00
	Females							
0	76.58	77.79	79.16	79.99	80.96	81.12	81.21	81.39
1	76.77	77.71	78.83	79.54	80.43	80.55	80.62	80.79
5	73.00	73.89	74.97	75.66	76.52	76.63	76.70	76.87
10	68.13	69.00	70.06	70.72	71.58	71.69	71.76	71.92
15	63.23	64.09	65.13	65.79	66.64	66.74	66.81	66.98
20	58.40	59.25	60.27	60.91	61.75	61.85	61.92	62.08
25	53.55	54.40	55.40	56.02	56.86	56.95	57.01	57.18
30	48.71	49.54	50.54	51.14	51.97	52.05	52.12	52.28
35	43.91	44.71	45.69	46.27	47.11	47.18	47.25	47.40
40	39.19	39.96	40.90	41.45	42.29	42.35	42.41	42.57
45	34.56	35.30	36.21	36.72	37.52	37.60	37.66	37.81
50	30.06	30.80	31.64	32.12	32.89	32.94	32.99	33.14
55	25.72	26.43	27.24	27.67	28.39	28.42	28.46	28.58
60	21.58	22.25	23.02	23.40	24.07	24.09	24.11	24.21
65	17.66	18.30	19.02	19.35	19.97	19.95	19.96	20.07
70	14.04	14.64	15.31	15.57	16.13	16.08	16.08	16.17
75	10.81	11.36	11.95	12.13	12.60	12.53	12.51	12.60
80	8.07	8.54	9.01	9.15	9.52	9.41	9.36	9.43
85	5.93	6.36	6.66	6.68	6.98	6.82	6.77	6.84
90	4.45	4.95	4.95	4.86	5.07	4.90	4.82	4.86

[1] Calculated by using the average of deaths in 1996 and twice those of 1997.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and Analysis Section.

Table A10. Landed Immigrants in Canada by Country of Birth, 1981-1998

	1981	1986	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASIA	**50,894**	**42,486**	**95,098**	**115,294**	**123,463**	**143,087**	**149,883**	**143,272**	**130,590**	**145,509**	**139,738**	**101,902**
China	9,789	4,190	8,981	14,483	20,982	22,407	19,731	23,348	20,981	24,986	24,750	22,622
South Korea	1,504	1,206	3,004	2,085	2,606	3,787	3,817	3,014	3,508	3,251	4,110	4,875
Hong Kong[1]	4,040	4,316	15,728	23,741	16,589	28,266	27,320	33,728	24,883	24,143	17,805	6,343
India	9,427	7,479	10,700	12,601	14,309	14,304	21,762	18,567	18,277	23,388	21,711	16,814
Iran	1,409	2,149	4,264	3,986	6,689	7,105	4,174	3,010	4,075	6,260	7,884	6,996
Iraq	305	316	1,115	815	996	2,177	3,319	2,254	2,416	2,771	2,574	1,862
Lebanon	1,043	2,451	6,870	12,978	12,225	6,662	4,806	2,725	2,164	1,895	1,470	1,342
Pakistan	823	630	2,042	2,150	2,780	3,751	4,509	4,406	4,662	8,556	12,179	8,396
Philippines	5,986	4,215	11,888	12,608	12,741	13,805	20,551	19,499	15,825	13,626	11,414	8,499
Sri Lanka	368	1,839	2,716	3,458	7,158	12,947	9,477	7,088	9,363	6,443	5,342	3,535
Taiwan	705	643	3,162	3,592	4,299	7,079	9,382	7,007	7,429	12,754	12,784	6,930
Vietnam	8,241	6,240	9,537	9,323	8,901	7,867	8,400	6,505	4,180	2,706	1,998	1,821
Others	7,254	6,812	15,091	13,474	13,188	12,930	12,635	12,121	12,827	14,730	15,717	11,867
EUROPE	**44,817**	**22,534**	**50,751**	**51,165**	**46,921**	**43,675**	**45,719**	**38,080**	**40,314**	**39,207**	**37,952**	**37,128**
Germany	2,075	1,349	2,015	1,611	1,576	1,412	1,659	1,364	1,590	1,760	1,562	1,647
Bosnia-Hercegovina	0	0	0	0	0	347	2,747	4,723	4,194	2,466	2,204	2,469
France	1,681	1,124	2,127	2,004	2,631	3,117	3,351	2,522	3,035	2,438	2,313	2,986
Great Britain	18,920	4,610	7,365	7,074	6,444	5,919	5,954	4,771	4,564	4,381	3,923	3,260
Greece	927	553	794	609	626	597	540	341	245	239	209	143
Ireland	851	477	1,303	800	639	490	417	317	228	259	226	173
Italy	2,058	787	1,197	1,073	782	672	696	533	506	489	466	369
Poland	4,094	5,286	16,013	16,807	15,812	11,971	6,945	3,572	2,453	2,167	1,793	1,507
Portugal	3,292	2,456	7,935	7,754	5,861	2,749	1,706	819	816	711	697	431
Romania	1,004	1,003	2,205	2,976	2,600	3,314	3,787	3,596	4,342	3,952	4,045	3,058
Russia	0	0	0	0	1	161	891	1,414	2,087	3,181	4,236	4,715
Ukraine	0	0	2	2	5	113	870	1,436	1,828	2,680	2,648	2,731
Others	9,915	4,889	9,795	10,455	9,944	12,813	16,156	12,672	14,426	14,484	13,630	13,639

	1981	1986	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
AFRICA	**5,915**	**5,200**	**12,428**	**13,911**	**16,656**	**20,265**	**17,576**	**14,216**	**15,506**	**15,847**	**15,316**	**14,418**
South Africa	1,238	797	1,416	1,005	947	1,139	1,668	2,465	1,478	1,351	1,767	1,403
Algeria	128	114	465	508	913	853	751	649	1,111	2,042	1,798	2,239
Egypt	767	631	1,749	2,522	1,942	1,641	1,661	2,321	2,716	2,375	2,043	1,297
Ethiopia	152	993	2,275	2,430	2,577	2,282	1,925	1,273	952	1,043	810	654
Somalia	9	58	448	1,160	3,276	5,561	3,657	1,729	2,078	1,424	1,159	1,383
Others	3,621	2,607	6,075	6,286	7,001	8,789	7,914	5,779	7,171	7,612	7,739	7,442
NORTH AND CENTRAL AMERICA	**10,183**	**12,419**	**11,890**	**13,146**	**19,100**	**18,843**	**14,428**	**8,774**	**7,270**	**8,550**	**7,927**	**6,848**
United States	8,695	6,100	5,817	5,135	5,323	5,980	6,480	5,154	4,331	5,051	4,402	4,140
Mexico	397	675	1,030	1,205	1,150	1,200	1,154	786	764	1,247	1,690	1,381
Others	1,091	5,644	5,043	6,806	12,627	11,663	6,794	2,834	2,175	2,252	1,835	1,327
CARRIBEAN AND BERMUDA	**8,805**	**8,951**	**10,945**	**11,840**	**13,119**	**15,242**	**16,755**	**10,071**	**10,101**	**9,396**	**8,234**	**6,378**
Haiti	3,704	1,765	2,380	2,389	2,852	2,433	3,687	2,124	2,044	1,976	1,656	1,310
Jamaica	2,688	4,694	4,002	5,035	5,135	6,062	6,118	3,953	3,644	3,309	2,870	2,252
Trinidad and Tobago	949	927	3,012	2,831	2,983	4,351	4,216	2,342	2,585	2,205	1,760	1,196
Others	1,464	1,565	1,551	1,585	2,149	2,396	2,734	1,652	1,828	1,906	1,948	1,620
SOUTH AMERICA	**6,126**	**6,557**	**8,578**	**8,631**	**10,517**	**10,314**	**9,559**	**7,956**	**7,521**	**6,019**	**5,590**	**4,878**
Guyana	3,024	3,991	3,370	2,895	3,371	3,059	3,553	4,272	3,978	2,392	1,841	1,272
Others	3,102	2,566	5,208	5,736	7,146	7,255	6,006	3,684	3,543	3,627	3,749	3,606
AUSTRALASIA	**1,024**	**451**	**637**	**728**	**743**	**931**	**1,018**	**742**	**676**	**695**	**626**	**514**
OCEANIA	**726**	**387**	**751**	**1,190**	**1,626**	**1,780**	**1,335**	**1,048**	**681**	**636**	**472**	**391**
OTHERS AND NOT STATED	**303**	**354**	**427**	**513**	**618**	**708**	**486**	**219**	**197**	**191**	**190**	**1,686**
TOTAL	128,793	99,339	191,505	216,418	232,763	254,845	256,759	224,378	212,856	226,050	216,045	174,143

[1] Includes Honk Kong SAR (Special Administrative Region) since July 1, 1997.
Note: Preliminary data as of July 12, 1999.
Sources: Citizenship and Immigration Canada, unpublished data.

Table A11. Canadian Population as of July 1st, 1996, 1997, 1998, by Age and Sex (in thousands)

Age	Males			Females		
	1996	1997	1998	1996	1997	1998
0	194.8	183.1	178.8	186.2	173.3	169.4
1	198.3	196.3	184.5	187.9	188.2	175.1
2	200.2	199.9	197.7	190.1	189.6	189.6
3	204.4	201.7	201.3	194.1	191.5	190.8
4	209.4	205.9	203.0	200.0	195.6	192.8
5	212.1	211.2	207.3	201.8	201.6	197.0
6	213.2	214.2	212.7	202.9	203.5	203.1
7	205.8	214.9	215.6	195.8	204.4	204.8
8	200.0	207.5	216.2	190.8	197.4	205.7
9	202.1	201.7	208.9	192.7	192.4	198.8
10	206.2	203.8	203.2	195.5	194.2	193.6
11	207.7	207.9	205.1	196.1	196.8	195.3
12	206.3	209.5	209.3	196.0	197.7	198.2
13	205.6	208.0	210.9	195.3	197.4	198.8
14	205.6	207.5	209.5	195.0	196.7	198.8
15	208.5	207.3	209.0	197.9	196.6	198.0
16	208.9	210.3	209.0	197.3	199.7	198.2
17	206.6	210.7	211.8	194.6	199.4	201.6
18	204.7	208.3	212.2	192.7	196.5	201.0
19	206.3	206.5	209.9	195.5	195.0	198.6
20	206.7	207.5	207.4	196.8	197.7	196.9
21	206.5	208.4	208.9	198.2	199.7	200.1
22	200.9	208.3	209.8	194.2	200.3	201.5
23	202.9	202.8	209.6	196.5	196.3	202.2
24	206.9	204.9	204.2	201.0	198.6	198.1
25	216.3	208.4	206.0	211.1	203.3	200.4
26	218.7	218.1	209.7	212.5	213.4	205.2
27	216.5	220.4	219.5	211.9	214.6	215.1
28	217.3	218.6	222.1	213.7	214.3	216.6
29	224.9	219.5	220.4	220.6	216.2	216.3
30	239.4	227.2	221.7	233.9	222.9	218.4
31	258.2	241.5	228.8	252.1	236.3	224.8
32	268.3	260.2	243.0	261.3	254.4	238.1
33	272.3	270.4	261.6	266.0	263.8	256.2
34	268.0	274.1	271.6	262.9	268.3	265.4
35	270.6	269.5	275.4	267.1	265.0	270.2
36	267.8	272.0	270.6	265.2	269.3	266.7
37	262.1	269.1	273.0	261.5	267.1	270.6
38	261.2	263.6	270.3	259.2	263.3	268.5
39	256.1	262.6	264.5	255.5	260.8	264.5
40	248.5	257.3	263.4	248.8	257.1	262.0
41	247.0	249.8	258.2	247.7	250.1	257.9
42	238.7	247.9	250.3	241.0	248.7	250.8
43	228.7	239.5	248.4	231.1	242.0	249.4
44	221.7	229.4	239.9	222.2	232.0	242.6
45	217.9	222.3	229.8	218.2	222.8	232.3
46	214.2	218.3	222.5	214.2	218.6	223.0

See notes at the end of the table.

Table A12. Canadian Population as of July 1st, 1996, 1997, 1998, by Age and Sex (in thousands) - Concluded

Age	Males			Females		
	1996	1997	1998	1996	1997	1998
47	210.7	214.5	218.3	211.5	214.6	218.8
48	211.4	210.8	214.5	211.5	211.7	214.6
49	210.9	211.3	210.5	211.5	211.6	211.6
50	181.6	210.6	210.8	182.2	211.6	211.5
51	169.5	181.2	210.1	169.8	182.3	211.6
52	165.2	168.9	180.5	166.3	169.7	182.1
53	160.4	164.7	168.3	161.4	166.3	169.6
54	149.0	159.7	163.9	150.6	161.3	166.0
55	143.0	148.3	158.9	145.2	150.4	161.1
56	135.2	142.3	147.6	137.5	145.1	150.2
57	131.6	134.5	141.5	134.3	137.3	144.7
58	127.1	130.9	133.7	129.6	134.0	137.0
59	122.4	126.2	129.9	125.4	129.4	133.7
60	122.2	121.5	125.2	125.7	125.1	128.9
61	119.0	121.1	120.2	123.0	125.3	124.6
62	116.5	117.7	119.8	120.1	122.5	124.7
63	117.8	115.1	116.1	122.6	119.6	121.9
64	118.1	116.3	113.4	122.8	121.9	118.7
65	115.7	116.2	114.3	123.2	121.9	120.9
66	111.6	113.6	114.1	120.8	122.2	120.8
67	105.5	109.4	111.3	116.7	119.7	121.0
68	102.8	103.1	106.9	115.9	115.3	118.3
69	97.6	100.3	100.5	113.5	114.5	113.7
70	94.3	94.8	97.4	113.6	111.8	112.8
71	90.0	91.3	91.7	111.3	111.9	109.9
72	85.1	87.0	88.1	108.5	109.5	109.9
73	80.2	81.9	83.7	104.5	106.4	107.3
74	76.7	76.9	78.5	102.8	102.2	103.9
75	70.9	73.2	73.4	97.1	100.4	99.6
76	64.5	67.4	69.6	90.5	94.5	97.7
77	53.5	61.5	64.3	78.3	88.1	92.0
78	48.6	50.4	58.3	72.0	75.6	85.4
79	44.9	45.3	47.0	69.1	69.2	72.7
80	41.6	41.6	41.9	65.7	66.0	66.1
81	39.3	38.1	37.9	64.1	62.4	62.5
82	34.5	35.9	34.6	58.7	60.7	58.9
83	30.0	31.3	32.6	52.5	55.1	57.0
84	24.9	26.8	28.2	46.4	48.9	51.4
85	21.0	22.1	24.0	41.2	42.9	45.3
86	17.8	18.5	19.5	35.9	37.7	39.3
87	14.5	15.5	16.1	31.2	32.6	34.4
88	11.9	12.4	13.3	26.9	27.9	29.2
89	9.4	10.0	10.5	22.6	23.8	24.8
90 +	28.5	29.8	31.6	83.9	88.0	92.9
Total	14,691.8	14,857.7	14,998.9	14,980.1	15,153.3	15,302.3

1996: Final postcensal estimates from March 22, 1999.
1997: Updated postcensal estimates from March 22, 1999.
1998: Updated postcensal estimates from March 22, 1999.
Source: Statistics Canada, Demography Division, Population Estimates Section.

Glossary[1]

Age: Age at last birthday (in years).

Aging (of a Population): An increase of the percentage of old persons in the total population.

Birth Cohort or Generation: Unless otherwise specified, refers here to a group of persons born within the 12-month period between January 1st and December 31st of a given year.

Census Coverage

Net undercoverage: Difference between undercoverage and overcoverage.

Overcoverage: Number of persons who should not have been counted in the census or who were counted more than once.

Undercoverage: Number of persons not enumerated in a census (who were intended to have been enumerated).

Census Metropolitan Area (CMA): The general concept of a census metropolitan area (CMA) is one of a very large ***urban area***, together with adjacent ***urban*** and ***rural areas*** which have a high degree of economic and social integration with that urban area.

A Census Metropolitan Area is delineated around an urban area (called the ***urbanized core*** and having a population of at least ***100,000 (based on the previous census)***. Once an area becomes a CMA, it is retained in the program even if its population subsequently declines.

CMAs are comprised of one or more ***census subdivisions (CSDs)*** which meet at least one of the following criteria:

(1) the CSD falls completely or partly inside the urbanized core;

(2) at least 50% of the employed labour force ***living*** in the CSD ***works*** in the urbanized core; or

(3) at least 25% of the employed labour force ***working*** in the CSD ***lives*** in the urbanized core (***1991 Census Dictionary***, Catalogue no. 92-351-XPE, page 181).

---

[1] For further information consult the following: International Union for the Scientific Study of Population (1980). **Multilingual Demographic Dictionary**, Ordina Editions, Liège and Van de Walle, Étienne. **The Dictionary of Demography**, ed. Christopher Wilson. Oxford, England, New York, New York, United States of America.

Cohort: Represents a group of persons who have experienced a specific demographic event during a given period which can be a year. Thus, the married cohort of 1996 consists of the number of persons who married in 1996. Persons born within a specified year could be referred to as a generation.

Cohort, fictitious: An artificial cohort created from portions of actual cohorts present at different successive ages in the same year.

Common-law Union: Union consisting of a male and a female living together as husband and wife, without being legally married.

Components of Demographic Change: Any of the classes of events generating population movement or variations. Births, deaths, migration, marriages, divorces and new widowhoods are the components responsible for the change in total population or in the age, sex and marital status distribution of the population.

Current index: An index constructed from measurements of demographic phenomena and based on the events reflecting those phenomena during a given period, usually a year. For example, life expectancy in 1996 is a current index in the sense that it indicates the average number of years a person would live if he or she experienced 1996 conditions throughout his or her life.

Dependency Ratio: The total population is customarily divided up into three broad age groups: 0-14 (children), 15-64 (adults) and 65 and over (older persons). The following ratios may be defined on the basis of this classification:

(a) child dependency ratio: The number of children per adult (15-64);

(b) age dependency ratio: The number of aged persons per adult (15-64);

(c) total dependency ratio: The sum of the child and the aged dependency ratios.

Error of Closure: Difference between the postcensal estimate and the population adjusted for net undercoverage according to a census for the same date.

Fertility: Relates the number of live births to the number of women, couples or, very rarely, men.

Infant mortality: Mortality of children less than a year old.

Intensity: Frequency of occurrence of an event among members of a given cohort.

Intercensal: The period between two censuses.

International Migration: Movement of population between Canada and a foreign country which involves a change in residence. A distinction is made between ***landed immigrants***, ***returning Canadians*** from other countries who settle in Canada, ***emigrants*** and the net change in ***non-permanent residents***.

Interprovincial Migration: Movement from one province to another involving a permanent change in residence. A person who takes up residence in another province is an ***out-migrant*** with reference to the province of origin, and an ***in-migrant*** with reference to the province of destination.

Life expectancy: A statistical measure derived from the life table that indicates the average years of life remaining for a person at a specified age, if the current age-specific mortality rates prevail for the remainder of that person's life.

Legal Marital Status: Indicates the conjugal status, that is whether single, married, widowed or divorced.

Single: Includes persons who have never been married and all persons under 15 years of age.

Married: Includes persons legally married and persons legally married and separated.

Widowed: A person whose spouse has died and who has not remarried.

Divorce: A person who has obtained a legal divorce and who has not remarried.

Mean Age: The mean age of a population is the average age of all its members.

Median Age: The median age is an age "x", such that exactly one half of the population is older than "x" and the other half is younger than "x".

Natural Increase: A change in population size over a given period as a result of the difference between the numbers of births and deaths.

Neonatal mortality: Mortality in the first month after birth (part of infant mortality).

Net migration: Difference between immigration and emigration for a given area and period of time.

Non-permanent Residents: The five following groups are referred to as non-permanent residents:

- persons residing in Canada claiming refugee status;

- persons residing in Canada who hold a student authorization (foreign students, student visa holders);
- persons residing in Canada who hold an employment authorization (foreign workers, work permit holders);
- persons residing in Canada who hold a Minister's permit;
- all non-Canadian born dependents of persons claiming refugee status, or of persons holding student authorizations, employment authorizations or Minister's permits and living in Canada.

Parity: A term used in reference to a woman or a marriage to denote the number of births or deliveries by the woman or in the marriage. A two-parity woman is a woman who has given birth to a second-order child.

Population: Estimated population and population according to the census are both defined as being the number of Canadians whose usual place of residence is in that area, regardless of where they happened to be on Census Day. Also included are any Canadians staying in a dwelling in that area on Census Day and having no usual place of residence elsewhere in Canada, as well as those considered "non-permanent residents".

Population Estimate:

Preliminary, Updated and Final Postcensal: Population estimates produced by using data from the most recent census adjusted for net census undercoverage and estimates of the components of demographic change since that last census.

Intercensal: Population estimate derived by using postcensal estimates and data from the most recent census counts adjusted for net undercount preceding and following the year in question.

Population Growth: A change, either positive or negative, in population size over a given period.

Population movement: Gradual change in population status over a given period attributable to the demographic events that occur during the period. Movement here is not a synonym for migration.

Population Projection: The projection differs from the estimate in that its objective is to establish what the evolution of the population will be in the future by size, geographical distribution and other demographic characteristics using selected hypotheses. A reference is made to a projection when the formulated hypotheses appear to be highly probable. Generally, population projections are restricted to a short term period.

Post-neonatal mortality: Mortality between the ages of one month and one year.

Prevalence: Number of cases existing at one point in time.

Probability of survival: Probability of a survivor of exact age x surviving at least to age $x+n$. Its notation is ${}_np_x$ and it is the complement of the probability of dying $(1-{}_nq_x)$.

Proportion ever married: A measure of the prevalence of marriage in a generation or a fictitious cohort. It is usually equivalent to the proportion remaining single at an age such as 50 after which first marriages are rare.

Rate:

Age-Specific Fertility: Ratio of the number of births occurring in a given age group to the number of females of a given age (per 1,000).

Birth: Refers to a rate calculated by relating the number of live births observed in a population during a given period to the size of the population during that period (per 1,000).

Divorce: Refers to the number of divorces per 1,000 population.

First Marriage: Ratio of the number of first marriages observed in a population in a given period to the number of persons in that population regardless of the marital status (per 1,000).

Mortality: Ratio of the annual number of deaths occurring in a population or sub-population during a given period to the number exposed to the risk of dying during the same period (per 1,000).

Population Growth: Ratio of population growth between the year t and t+1, to the average population of that period (per 1,000).

Residual: Difference between population growth as measured by population estimates of two consecutive years and the sum of the components. This difference results from the distribution of the closure error between years within the quinquennial period.

Returning Canadians: Canadian citizens and landed immigrants who emigrated from the country and who subsequently returned to Canada to re-establish a permanent residence.

Sex Ratio: The ratio of the number of men to the number of women. This is not to be confused with the sex ratio at birth, which is the ratio of the number of liveborn boys to the number of liveborn girls. This ratio is usually expressed as an index, with the number of females taken to be a base of 100.

Standardized Rates: Mathematical transformations designed to make it possible to compare different populations with respect to a variable, e.g., fertility or mortality, where the influence of another variable, e.g., age, is held constant.

Structure: Arrangement of a population by different demographic characteristics such as age, sex or marital status.

Tempo: Distribution over time, within the cohort, of the demographic events corresponding to the investigated phenomenon.

Total Rates: A period measure obtained by the summation of the series of age-specific or duration-specific rates. It represents the behaviour of the members of the fictitious cohort.

Total Divorce Rate: Proportion of marriages that finish in divorce before the 25th anniversary according to the divorce conditions of that year. It is a result of the sum of the divorce rates by length of marriage expressed per 10,000.

Total Fertility: Average number of children per female according to the fertility in a given year computed by the summation of the series of age-specific fertility rates.

Total First Marriage: Proportion of males or females marrying before their 50th birthday according to nuptiality conditions in a given year computed by the summation of the rates by age at first marriage.

Vital Statistics: Includes all the demographic events (that is to say births, deaths, marriages and divorces) for which there exists a legal requirement to inform the Provincial or Territorial Registrar's Office.

Part II

RELATIVE INCOME, OPPORTUNITY COST AND FERTILITY CHANGES IN CANADA

by Laurent Martel and Alain Bélanger

AN ANALYSIS OF THE CHANGE IN DEPENDENCE-FREE LIFE EXPECTANCY IN CANADA BETWEEN 1986 AND 1996

by Laurent Martel and Alain Bélanger

ETHNIC MOBILITY AND THE DEMOGRAPHIC GROWTH OF CANADA'S ABORIGINAL POPULATIONS FROM 1986 TO 1996

by Éric Guimond

RELATIVE INCOME, OPPORTUNITY COST AND FERTILITY CHANGES IN CANADA

by Laurent Martel et Alain Bélanger

Fifteen years ago in this series, A. Romaniuc published a comprehensive study of how fertility in Canada had evolved over the century (Romaniuc, 1984). It described the phenomenal increase of fertility in the postwar period, resulting in the baby boom. With the largest cohorts ever known in Canada, the baby boomers, by their numbers alone, will have left their mark on Canada's social, economic and political structure throughout their life cycle.

Paradoxically, the first cohorts of the baby boom were also the first not to be replaced. Already in 1984, Romaniuc's study measured the importance of this new fact, emphasizing the sudden decline in the various fertility indicators during the seventies. Even today, the study's first paragraph remains topical, although some uncertainties of that period regarding the replacement of generations or the increase in the number of infertile couples have now become measurable realities:

> *The rate of fertility has fallen so low in Canada that the replacement of the present generations is no longer assured. Canadians now have fewer children, later in their lives and more may choose to forgo parenthood altogether. Changes of unprecedented proportions are taking place in the dynamics of population growth, the age structure and family and household formation. Fertility is the single most important demographic factor underlying these changes. Neither mortality nor migration, the other two components of population growth, have had a comparable influence.*
>
> (Romaniuc, 1984: 7)

For nearly 30 years now, the total fertility rate in Canada has been so low that it is no longer sufficient even to replace the present generations, or in other words to renew the population. While Canada maintains relatively strong population growth when compared to the other OECD countries, especially those in Europe, this is due to immigration, which is playing an expanding role in overall population growth. But demographers have clearly shown that the impact of migration on the age structure of a population is marginal when compared with the effect of fertility.

In 1997, Canada's total fertility rate stood at 1.55 children per woman. Never before had it been so low. But Canada is not the only country in this situation; indeed, a decline in fertility has been observed in all developed countries. Europe is now experiencing the lowest levels ever recorded. Thus

in 1997 the total fertility rate stood at 1.36 children per woman in Germany, 1.15 in Spain and 1.22 in Italy (Monnier, 1998). These national averages sometimes mask even lower levels for large regions: the level for eastern Germany in 1994 was 0.77 children per woman! Such fertility levels quickly affect population growth, and some fifteen European countries already have a negative rate of natural increase. Canada should be in this situation within some 30 years.

Consequently, many social scientists—demographers, economists, sociologists, anthropologists—have tried to get a better grasp of the factors that cause fertility to rise or, as in this case, to fall. Up to now, there has been no theory or explanation to settle this universal and still-topical debate. True, demographers such as K. Davis and J. Blake (1956) have identified a set of eleven intermediate variables, classified into three categories—risks of exposure to sexual relations, risks of conception and risks of live birth—by which fertility is expressed. But while there is no question that these variables, some of which are based in biology, play a role, they are not sufficient to explain the fertility levels and behaviours observed in industrialized societies such as Canada. One of the most popular and often-used approaches to this subject is based on economic analysis, giving rise to economic theories of fertility. There are basically three such theories: the relative income model developed by Easterlin; the "*New Home Economics*", originally developed by Becker; and Caldwell's model of intergenerational flows. Since the third theory deals more with the situation of developing countries, only the first two will be considered. The objective of this study is not to subscribe to one or the other of these theories, but rather to examine whether they apply in the Canadian context, as a matter of scientific interest.

Basic Postulates of These Economic Theories

The idea that there is a link between population and economics is not new: the Mercantilists, the Physiocrats and the Classics have left us a number of writings on the relationship between the power of the state—economic power, but especially military power at the time—and the number of its subjects. But it was not really until the late 1950s that researchers undertook to explain reproductive behaviour in terms of socioeconomic variables under the postulate, inherent in the law of supply and demand, that consumers' choices are rational. One of the first to pose the problem in these terms was H. Leibenstein, in 1957, as part of his theory of the *Demographic Transition*. Seeking to explain the causes of the decline in fertility—the second stage of the Demographic Transition—he showed that couples decide whether to have an additional child on the basis of a cost-benefit analysis.

And indeed, reproduction has become a matter of choice, because of a major revolution in the history of human populations: the control of fertility

through contraception. With the development of effective birth control methods, couples were able to choose relatively accurately the maximum number of children that they wanted and the timing of the births, giving them, to a large degree, control over their fertility. Only infecundity is today still a factor that can prevent couples from achieving the desired number of children. A "demographic" hypothesis is therefore discreetly posed, namely that the fertility achieved by a couple corresponds to the fertility desired. Hence the control of fertility is a necessary condition for these models.

The child therefore becomes another *consumer durable* among others; this is the second basic postulate. This analogy between children and consumer goods has elicited numerous criticisms, especially by sociologists who see it as the ultimate expression or culmination of *homo economicus* (Blake, 1968). An important nuance should nevertheless be noted here, namely that the economic approaches to fertility do not assign children *the same value* as material goods; rather they see them as resulting from *the same decision-making process* on the part of households or couples.

Starting with these few postulates, it is hypothesized that each household tries to maximize a utility function[1] on the basis of two factors: its tastes—or its preferences or aspirations—and its limited resources. Therefore, each household has an income constraint that forces it to make choices based on decisions that are, as noted above, assumed to be rational. Since in economics, the demand for a good can vary as a function of its price and the income of individuals, the entire thrust of these theories will be to see how the demand for children varies in relation to these two parameters. Since a child is considered a superior good, any increase in the household's income should lead to an increase in the demand for children. These models therefore all suggest, at the outset, that there is a positive relationship between income and fertility. Conversely, an increase in the cost of children will have as its corollary a decrease in the number of children desired.

The "Relative Income" Model or the Pennsylvania School

Based primarily on the works of Easterlin (1961, 1973, 1975, 1978) and to a lesser extent on those of Pollack and Wachter (1975), the relative income model attempts to explain changes in fertility over time rather than differences among households at a specific point in time. The approach is therefore macroeconomic, and it calls for large aggregates that cover fairly long periods, such as half a century. Hence the longitudinal data needed to test these models empirically are scarce, hard to obtain and sometimes even totally non-existent.

---

1 A household's utility function may be seen as the satisfaction that it derives from the consumption of goods given the costs.

Unlike the "*New Home Economics*", the other theory in this field, the approach developed by Easterlin focuses on households' relative income rather than their absolute income. Echoing Durkheim and his concept of "*socialization*", Easterlin (1997) postulates that there is a process of "*economic socialization*" by which individuals define their tastes and aspirations, in particular material ones, on the basis of the milieu from which they came, that is, the socioeconomic conditions of their parents. Most often, there is a gulf between these material aspirations and the households' economic resources, forcing them to make choices based on their preferences. Income is therefore in many respects relative, since it also depends on the circumstances in which individuals operate and their aspirations to achieve a standard of living equivalent to what they experienced in their parents' home.[2]

According to Easterlin, it is possible that fertility will vary even if prices and wages remain constant from one period to another because of couples' material aspirations, which are fixed, in a sense, by their social origin. According to him, the parents of baby boomers, most of whom experienced the effects of the Crash of 1929 when they were young, grew up in difficult economic circumstances that instilled in them a more "reserved" behaviour as consumers. Many of them joined the labour force in large numbers during the war or soon afterward and found that their incomes could easily satisfy their relatively modest material aspirations, leaving room for having children. By contrast, the parents of the children born during the last two decades were reared in relatively well-off families. Encountering more difficult conditions or even unemployment on entering the labour market, they found it more difficult to satisfy their material aspirations, which were greater than those of their parents at the same age. To attempt to meet those aspirations, they therefore had to limit their number of offspring.

According to Easterlin, households' fertility depends on the gap between material aspirations and resources for satisfying them: the greater the gap, the more fertility will be reduced. Hence it is not impossible that the expected positive effect of income growth on fertility may be cancelled out by households' ever-growing material aspirations.

There are very few microeconomic studies verifying the "*relative income*" model, since it is more suited to macroeconomic analysis. Generally such analysis consists of superimposing one curve on another in the same figure,

---

[2] It should be noted here that in 1975, Leibenstein incorporated this dimension into the "*New Home Economics*," which will be described in Part II. The similarities with the Easterlin approach published a year earlier suggest that Leibenstein drew heavily on the relative income model. However, he added an interesting element, namely the possibility of social mobility from one generation to the next. According to Leibenstein, an improvement in a household's' economic conditions may conceivably have the effect of changing its social status and therefore its aspirations with respect to material goods and fertility.

with one representing the change over time in a fertility rate and the other representing either a relative income index or, where necessary, a proxy of such an index. The latter option proved necessary in Easterlin's case, for he quickly ran into the problem of obtaining satisfactory income statistics covering a period long enough to test his theory empirically. He therefore suggested using, as a proxy for relative income, the size of one cohort in relation to another, with the latter generally being the one from which the former originated. Accordingly, we will first use this hypothesis of Easterlin, which utilizes demographic indicators, to test his theory with Canadian data. Since there is a sizable body of such data, long series of economic indicators, on wages and incomes in particular, may be obtained, then we will undertake to compare them directly with fertility. It should be kept in mind that the method used in this article does not allow us to identify causal links between the variables analysed, but rather to establish a correlation that will be quantified using the coefficient of correlation.[3]

The Measure of Fertility

The index used to represent the change in Canadian fertility over time is the net reproduction rate (NRR). This index reflects the number of daughters that a mother will bear in the course of her reproductive life, taking account of prevailing mortality and fertility conditions.

Figure 1 shows the change in the net reproduction rate since 1921 in Canada. Relatively high at the start of the century, it gradually fell during the first thirty years to reach its lowest level during the decade following the Crash of 1929. At that time, it stood at 1.25 daughters per mother, and thus it was nonetheless high enough for the replacement of generations. As soon as the Depression years were over—that is, at the start of the 1940s—the net rate began rising sharply, reaching 1.8 in the late 1950s. This means that during this period, each woman was replaced by 1.8 daughters, resulting in relatively robust population growth. Of course, this period corresponds to the baby boom, an especially important phenomenon in Canada.

Since the mid-1960s, the net reproduction rate has slowed considerably, falling sharply in the 1970s and then more slowly starting in the 1980s. It was in the early 1970s that it fell below the population replacement level. Without immigration, the Canadian population would be destined to start falling fairly rapidly, once population growth momentum[4] had run its course.

---

[3] It should be noted here that the coefficient of correlation used (Pearson's) is a measure of linear relationship.

[4] Population growth momentum is the growth momentum acquired by a population.

The Net Reproduction Rate and the Total Fertility Rate

The most popular indicator for measuring the fertility level is the total fertility rate (TFR), which indicates the number of children that a cohort of women would have during their existence if they had the fertility rates by age that are observed in a given year. However, it is difficult to interpret this indicator. For example, why is the replacement level currently set at 2.1 children per woman?

In fact, that figure is primarily based on a biological concept: in order for a man-woman couple to provide for its replacement, an average of 2.05 births are required (this is the inverse of the proportion of female births, which for humans is 0.488). It is next necessary to take account of deaths that will occur between birth and the time when these newborns can in turn reproduce, which is approximated by the average age at motherhood. Since infant mortality has reached a very low level in Canada, few children born (scarcely 2%) will die before that age. It therefore takes 2.05 / 0.98 = 2.1 children per woman for a couple to be replaced, taking account of the biological factor and the prevailing mortality pattern within the population. In old civilizations, where infant and child mortality were high, it was not unusual for the replacement level to reach 4 children per woman.

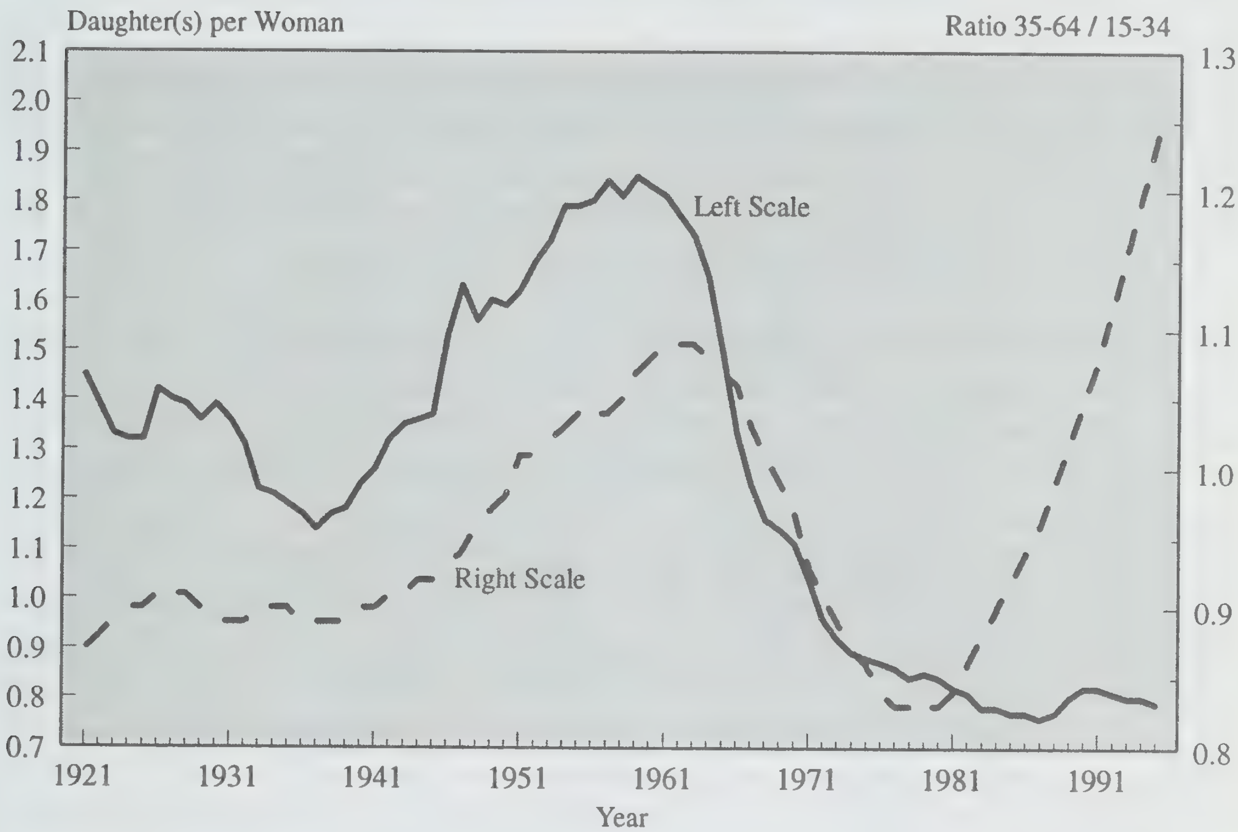
The net reproduction rate (NRR) is an easier measure to interpret, since it consists of the TFR multiplied by the proportion of female births and by females' probability of survival to the average age of motherhood. Since each mother must be replaced by a daughter, the NRR must be at least equal to one. If it falls below that level, generations will no longer be replaced. Therefore it directly incorporates mortality, which was fairly high in Canada at the beginning of the century. Like the TFR, the NRR is a cross-sectional measure, but it is sensitive to specific events such as wars or depressions, which can affect both the level and the tempo of fertility. This characteristic seems desirable here, since the economic indicators used in this article are also sensitive to these events.

Demographic indicators

Probably drawing on the works of Grauman (1960) but especially those of Kuznets,[5] Easterlin (1973) proposes that a negative relationship exists between

[5] A Nobel laureate in economics, S. Kuznets is known for having developed a theory of economic growth cycles lasting approximately 20 years; he includes population growth as a variable.

Figure 1. Comparison Between the Evolution of the Net Reproduction Rate and the Ratio of 35-64 / 15-34, Canada, 1921-1995



Sources: Statistics Canada, Demography Division, Population Estimates Section and Research and Analysis Section.

the size of a cohort and its fertility, owing to a control mechanism that could be described as neo-Malthusian. Assigning a major role to the demand for labour, Easterlin contends that a large cohort entering the labour force will necessarily bring down the price of labour because of the abundance of manpower that it generates. This drop in the price of young people's labour will have the effect of making it harder for individuals to achieve their material aspirations, and they will therefore reduce the size of their family. The smaller number of children from these families, once they in turn reach adulthood, will encounter a more favourable situation in the labour market, pushing up wages, having a positive effect on their fertility, and so forth, giving rise to a cyclical movement of fertility known as the "theory of cycles".

Figure 1 reproduces the classic demographic ratio used by Easterlin but with Canadian data. It shows the population aged 35-64 in relation to the population aged 15-34. This is intended to reflect the size of the parents' cohort in relation to the size of the cohort presumably consisting of their children. The change in this ratio since 1921 clearly illustrates recent Canadian demographic history. Relatively stable until the end of World War II, the ratio increased rapidly during the 1950s because the small cohorts of the difficult

years following the Crash of 1929 entered the 15-34 age group. In the early 1960s, this trend reversed radically, when the first baby boomers reached age 15 and the small cohorts of the Depression moved into the 35-64 age group. A few years later, between 1975 and 1980, a period when the demographic ratio reached its historic low point, the 15-34 age group was approximately 25% larger than the 35-64 age group! The striking new rise in the ratio since the start of the 1980s is of course due to the gradual entry of the oldest baby boomers into the 35-64 age group and their replacement in the 15-34 age group by the smaller cohorts that they begat.

It must therefore be concluded that over the study period, the change in this demographic ratio does indeed resemble a cyclical movement. However, it is unlikely that this pattern will extend very far into the 21st century if recent fertility trends continue. The ratio should continue to grow for a few more years, the time it takes for the last of the baby boomers to reach age 35 (in 2000), but it should then stabilize at around 1.6. At that point, the effect of the baby boomers' exit from the 35-64 age group on the demographic ratio will be cancelled out by the gradual reduction in the number of persons reaching age 15.

The fit between this ratio and the NRR is not obvious. The coefficient of correlation over the period as a whole is only 0.27, suggesting a linear relationship that is very weak. In fact, at both ends, the curve of the ratio seems to diverge markedly from the NRR curve, while toward the middle the two fit more closely. Taken separately, the coefficient of correlation for the period 1940-1980 increases to 0.83, suggesting that Easterlin's hypothesis applies fairly well to the baby boom and the early part of the baby-bust, but not so well to the periods before and after.

Between 1921 and 1945, the value of the demographic ratio shows that the younger cohorts were larger than older ones, partly because of major waves of immigration to Canada during the first twenty years of this century. While immigrants encountered favourable employment conditions during the 1920s, this was certainly not the case in the following decade. Combined with the economic problems caused by the Depression, the large number of young persons at that time may have exerted downward pressure on the net reproduction rate; from 1927 to 1938, it fell from 1.4 to 1.1.

But the closest—and the most surprising—fit between the two curves is observed for the period of the baby boom in Canada, which, it will be recalled, extended from 1946 to 1965. Starting in approximately 1940, the demographic ratio (35-64 / 15-34) began to grow, suggesting that there were few members of the young cohorts aged 15 to 34 entering the labour market. Therefore the supply of work probably exceeded the demand, causing wages and family incomes to rise. Figures 3 and 4, which appear further on in this article, clearly illustrate the sustained growth in those two factors during this period.

The general appearance of the two curves indicates a good correlation between fertility and the size of the cohorts coming into the labour market during the period extending roughly from 1940 to 1980. Throughout the entire period of decreases—that is, from the mid-1960s to the start of the 1980s—the two indicators exhibited a strong positive correlation. The massive entry of the baby boomers into the labour force may have increased the supply of workers, also increasing unemployment (see Figure 6) and therefore causing the economic status of young households to deteriorate.

Since the early 1980s, the two indicators have evolved separately, suggesting that the cycle that began in the early 1940s has been broken. According to the theory of the Pennsylvania School, fertility should have again been rising for the past two decades, since the cohorts entering the labour market are relatively smaller than in the two previous decades.

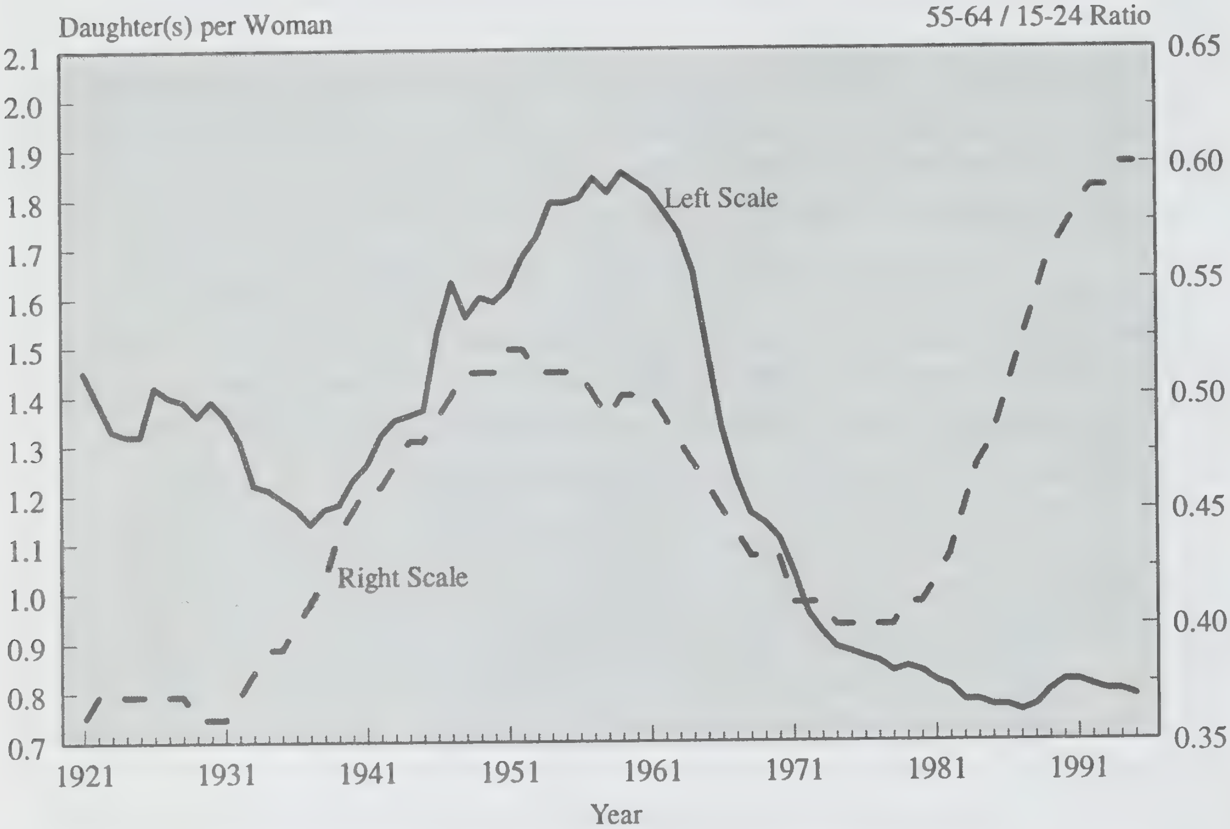
In fact, the strong increase in the demographic ratio since the start of the 1980s is due more to the sustained growth of the 35-64 age group than to the decrease in the numbers of younger persons. The number of individuals arriving at age 15 fluctuates between 350,000 and 400,000, implying that for the youngest labour force entrants, the competition remains relatively constant. The gradual entry of the overcrowded cohorts of the baby boom into the 35-64 age group, which extends to the year 2000, further explains the rapid increase in the demographic ratio. Thus, even more than serving as an indicator of the situation of the 15-34-year-olds, it appears that the demographic ratio in Figure 1 primarily reflects the aging of the Canadian labour force.

It thus seems difficult to conclude, on the basis of an analysis of the Canadian data, that there are Easterlin-type cycles based on the ratios of cohort sizes. In fact, it is not impossible that even more than the size of the cohorts, it is the entry and exit flows into and out of the labour market that have an impact on fertility.

Figure 2 provides a better illustration of this hypothesis. It shows a new demographic ratio, based on an article of Leridon (1978), which is intended to describe these labour market entry-exit flows and thereby illustrate the rate of replacement of the labour force. The 55-64 age group is made up of individuals gradually leaving the labour market. Since the retirement age has been falling steadily in Canada for twenty years (Gower, 1997), the ten-year interval used here provides a better picture of this situation. At the opposite end, the 15-24 age group may be seen as reflecting the entry flow into the labour market. The gap between the two age groups, which is greater than in the preceding figure, suggests that this is no longer a comparison between the sizes of parent cohorts and children cohorts.

In their general appearance, the two curves greatly resemble those in Figure 1, but perhaps they reflect even more the tendencies toward convergence in

Figure 2. Comparison Between the Evolution of the Net Reproduction Rate and the Ratio of 55-64 / 15-24, Canada, 1921-1995



Sources: Statistics Canada, Demography Division, Population Estimates Section and Research and Analysis Section.

the middle and divergence at the ends. The coefficient of correlation for the period as a whole is 0.0009, or nil. However, if the period 1940-1980 is examined separately, an extremely strong coefficient of 0.93 is obtained. This is another indicator that in Canada, Easterlin's cyclical hypothesis applies only to the baby boom and baby bust period.

In light of these results, the links between the age structure of the labour force and the affluence of households remain complex and inconsistent, suggesting on this score that the evolving economic situation plays a role that is probably more decisive or at least perturbative. The demographic ratios calculated in this section do not tend to confirm Easterlin's theory of cycles over the period as a whole. In Canada, only the period between 1940 and 1980 provides such confirmation. A number of factors—a buoyant economy; the smaller numbers entering the labour market; couples' probably modest aspirations regarding material goods as a result of growing up during the Great Depression of the 1930s; and the fact that men's relative incomes were more comfortable that ever before—combined to produce the baby boom in Canada.

In concluding this part, it should be noted that similar findings are reported in the literature. Using Canadian data, Abeysinghe (1991) observed a strong

correlation between a similar demographic indicator (30-64 / 15-29) and the total fertility rate only for the 1940-1976 period. After studying several developed countries, Chesnais (1986), for example, stresses that Easterlin's demographic hypotheses apply much better to Anglo-Saxon countries than to European countries in general and France in particular. It is interesting to note that Canada, the United States and Australia are the countries that experienced the greatest postwar baby boom. Does this mean that while the idea of a "law" or "principle" such as exists in the pure and applied sciences was appealing, the relative income model cannot be generalized, through demographic variables, into a theory of cycles, as Easterlin suggested? In light of our results, this is the conclusion that must be drawn, even though a relationship between income and fertility still seems possible.

In fact, what appears to be invalidated over the long term is instead the relationship between income and cohort size. Pampel and Peters (1995) suggest a few reasons that can explain the absence of an Easterlin cycle after 1980. Among others, they point out:

1) the increasing importance of business cycle on the labour force demand;
2) the growth in the number of immigrants during the last two decades that could have increase labour force competition (this reason does not seem to apply to the Canadian case);
3) changes in sex-role orientations (in particular, the increasing labour force participation of females);
4) and, finally, the exceptional size of the baby-boom generation which could have had long terms effects on the labour market.

For that reason, it is interesting to directly look at the economic variables as described in Easterlin's theory.

Economic Indicators

Using Statistics Canada data, we can directly verify whether the link between the relative income of the young and fertility really exists, since in Canada there are long series of data on wages and incomes (see Box "Income data sources used and methodology").

Figure 3 features curves showing the change over ten years in average annual wages in Canada.[6] These results were obtained taking account of the

[6] The appearance of the NRR curve may vary slightly from one figure to another, such as between Figure 3 and Figure 4. The explanation for this "anomaly" lies in the method of computing the NRR shown. This consists in calculating moving averages covering periods that are based on those of the economic index being compared to it. In Figure 3, for example, the data used to calculate changes in wages covered the period 1920-1930. We therefore calculated the average of the NRRs for the equivalent period. On the other hand, Figure 4 shows the NRRs obtained by taking the average for the period surrounding the census, such as 1946-1955 for the 1951 Census.

Income Data Sources Used and Methodology

The use of time series limits the choice regarding data sources. Very often, Statistics Canada surveys, such as the Survey of Family Expenditures (SFE), are relatively recent (since 1953 in the case of the SFE) and cannot be used to establish a very long series for a variable. Censuses, of which Canada has a long tradition, have therefore been used to construct the series of historical data needed to test Easterlin's economic hypotheses.

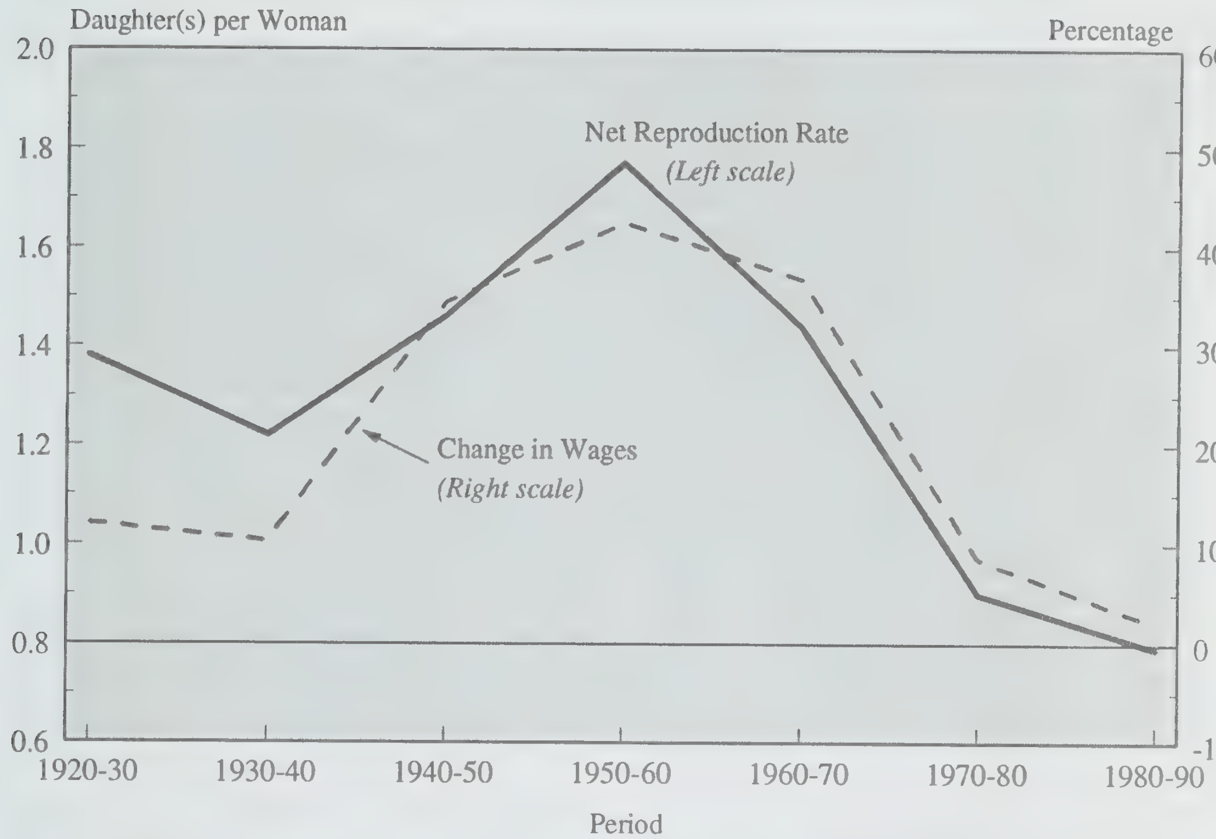
However, various problems appear. The greatest is the fact that concepts change from one census to another. From 1921 to 1961, for example, the censuses supply information on average earnings (or wages) of wage-earners over the twelve months preceding the date of the census. Since 1971, the data published instead concern individuals' income during the calendar year preceding the census (e.g., in 1970 for the 1971 Census). In one case, then, the data concern the earnings of employees, while in the other they concern the income of individuals, and moreover the periods covered are different.

While in theoretical terms is it hard to compare these two concepts that cover quite separate realities, Bourcier de Carbon (1997) recently showed, for the United States, that wages and incomes were practically the same before the 1970s. The same assumption is made here. The only adjustment made to the data starting in 1971 was therefore to determine averages only for persons who reported having an income and not for the labour force as a whole. Considering that both before and after 1971, the data cover annual wages or incomes, no correction was made to adjust the reference period. Lastly, the data prior to 1951 do not include Newfoundland, the Yukon and the Northwest Territories.

Since the value of the dollar has varied considerably over time, especially owing to the evolution of prices, it is necessary to convert current wages or income into constant dollars for purposes of comparison. To do this, the Consumer Price Index (CPI) was used (Matrix M9957 in CANSIM, which concern annual CPIs) to express all the data in 1992 constant dollars.

evolution of prices (and hence inflation) over the course of the century, so that the indicator would reflect a *real change* that could be compared with wage-earners' purchasing power. This indicator can give an initial idea of how well-off Canada's households were in different periods, and indeed of their confidence in the future.

Figure 3. Percentage Change by 10 Year Period of the Average Annual Wages, Canada, 1920-1990



Note: These percentage changes are calculated using constant 1990 dollars. Consequently, they are adjusted for price changes over the century.

Sources: Wages data: Rashid, A. (1993). Fertility data: Statistics Canada, Demography Division, Research and Analysis Section.

Figure 3 shows there is a clear similarity between the two curves, suggesting that there may be a direct relationship between the growth of wages and fertility, regardless of the sex of the wage-earners. Similar patterns (not shown) holds for males and females. The coefficients of correlation between the two indicators are high: 0.58 for women and more especially, 0.84 for men. Such values attest to the strength of the linear relationship that exists between the different curves even if there are only a few data points.

Until the early 1940s, the change in annual wages in Canada was small; in the case of women it was even negative between 1930 and 1940. The relative absence of income growth, primarily due to the Crash of 1929 and the difficult years that followed, definitely had a negative impact on period fertility, which declined during the same time period. By the start of the 1940s, a strong rebound in the growth of wages in Canada may be observed, undoubtedly due to the upswing in production during World War II. Fertility rebounded at the same time, suggesting that households took advantage of this rising income to increase not only their consumption but also their number of children. The two indexes peak at nearly the same time, during the 1950s.

Lastly, the start of the decline in wages and fertility occurs nearly simultaneously, and the pattern of change is parallel during these last two decades. The similarity between trends suggests that households may have opted to limit their number of children as a strategy for maintaining their living standard.

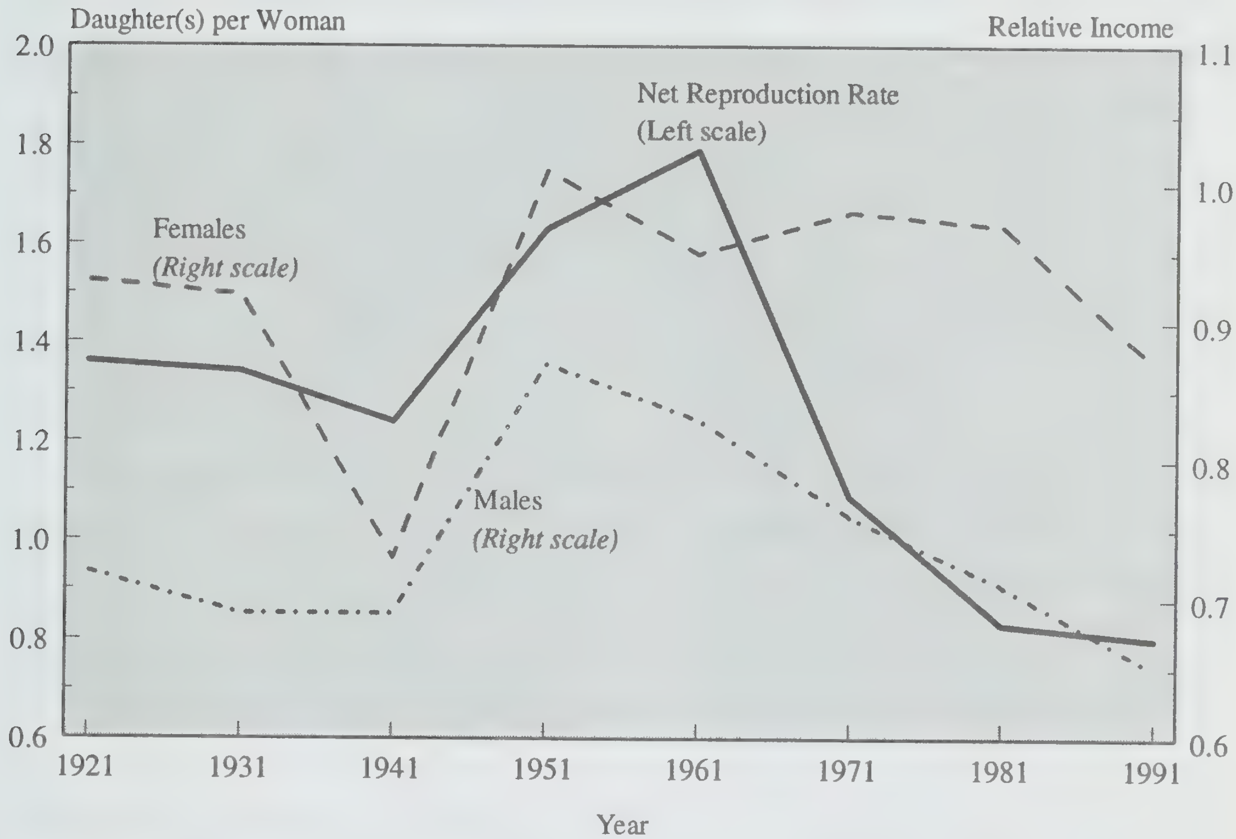
Rashid (1993) shows that in all, real wages increased by a factor of 3.6 over the period 1921-1991. Yet the fact remains that despite this additional purchasing power, today's couples are having fewer children than couples at the beginning of the century. This is a first piece of evidence supporting the hypotheses advanced by Easterlin, since the additional disposable income probably goes toward the fulfilment of material needs that are greater than in the past, such as the purchase of a second television or, even more, the purchase of a second car within the household, in place of another child. In fact, all this suggests that it is perhaps not the actual level of income, but rather changes in income that have an effect on couples' fertility.

Of course, the growth of wages is highly dependent on a country's economic situation. There are no periods during the 20th century when wage growth was sustained despite difficult economic times. If such a situation had occurred, a comparison of the period fertility rate and the growth of incomes would have given a better idea of couples' sensitivity to the growth of their wages *without* the perturbative effect of the state of the economy. But since no such situation occurred, it is difficult to go further in explaining the links between fertility and income growth. Nevertheless, Figure 3 suggests a strong positive relationship between these two elements. It therefore tends to confirm the hypothesis of the economic models of fertility, namely that fertility varies positively with income (wages). Thus far, no difference by sex has been observed.

In order to test Easterlin's hypothesis concerning the relative situation of young households, it is necessary to calculate an indicator that shows a ratio between the wages or incomes of young persons between 20 and 34 years of age and those of older persons, aged 45-64. Because wages or incomes generally increase with experience, this ratio is generally less than one. The closer the ratio comes to that value, the more favourable is the situation of the young in comparison to that of the older group, making it easier for them to achieve their parents' standard of living. Conversely, a low ratio means that the economic situation of the young is difficult and that their means of fulfilling their aspirations are more limited.

Figure 4 shows this ratio by sex, something that is fairly seldom done in the literature. Overall, the relative income of young men in 1991 was not fundamentally different from what it was in 1921 (roughly 0.7). However, between those two dates, the ratio reached more than 0.85 in the 1951 Census, suggesting that at that point, young male workers had on average 85% of

Figure 4. Relative Income of Young Adults Aged 20-34 and the Net Reproduction Rate, Canada, 1921-1991



Note: Relative incomes were computed using constant 1992 dollars.
Source: Statistics Canada, various Censuses of Canada and Demography Division, Research and Analysis Section.

the income of older male workers. Clearly, then, young households at that time were in an economically advantaged position compared to those before and after them. It is worth noting that after this peak, the decline in the ratio was continuous, attesting to the steady deterioration in the relative incomes of the young for the past three decades.

The curve for women diverges from the curve for men after 1961. Just before that, in 1951, it is also interesting to note that the ratio was greater than one, which means that at that point, young women had higher incomes than older women. Such a situation, which can only be described as exceptional, is probably explained by the sizable demand for labour in Canada during this period. Young women were relatively absent from the labour market, and employers were able to draw them into it by offering them wages that were relatively more attractive, although lower than men's. It can also be related to differentials in the number of hours worked: perhaps, young single women were working more hours than older women who were more likely to be married. Starting in 1961, the curve for women varies less than the curve for men, and the ratio remains much closer to one. This phenomenon may be explained by three interrelated factors: the more rapid increase in women's

average education level enabled the younger ones to constantly obtain better and higher-paying jobs than their mothers had; more of them worked full-time; and there were major changes in the make-up of the labour market for women at this time. All these factors tended to prevent the decline in relative incomes observable for men.

When these ratios are compared to the net reproduction rate, the first thing noticed is how well the latter matches with the curve for men: the inflection points often correspond, as do the growth and decline segments. Indeed, the coefficient of correlation of these two curves is 0.76, attesting to the strength of the linear relationship. Thus, when the relative wages of young men deteriorate, fertility stagnates or declines; when they improve, as they did over the period 1941-1951, fertility rises substantially. Only between 1951 and 1961 did men's relative income and fertility not move in the same direction, with the former declining and the latter still rising. This situation, unusual in the overall pattern of the two curves, is probably not significant, since the difference between the value of the ratio in 1951 and in 1961 is only 0.05. Probably the economic situation of the young at that time was nevertheless more favourable than that of their parents, who had lived through the difficult years following the Crash of 1929.

These results obtained from data extracted from Canadian decennial censuses tend to confirm Easterlin's hypothesis that a positive relationship exists between young men's relative income and fertility. Couples limited their family size once they felt that young men's incomes were declining in relation to their fathers' incomes. Since they could no longer fulfil their material aspirations or attain the living standards they desired, they lowered their childbearing targets.

One of the strongest criticisms of Easterlin's model in the literature is that it does not take the woman's income into account in explaining reproductive behaviour (Oppenheimer, 1976). No distinction is generally made as to the impact of the relative income of the woman on a couple's fertility. In fact, for Easterlin, the woman participates in the labour force only if the man's income is insufficient to meet the couple's material aspirations, and in so doing, she increases competition in the labour market. Otherwise she devotes herself to domestic activities, which suggests that this model subscribes to the idea of bias in gender division of labour.

With respect to this issue, a useful feature of the Canadian data is that they allow us to distinguish between the sexes, and this brings out some highly interesting points, illustrated in Figure 4. The coefficient of correlation of women's relative income to the NRR over the period is only 0.23, suggesting a very weak relationship between the two curves. However, two sub-periods appear to stand out, namely before and after the decade 1951-1961, during which the direction of the relationship reverses.

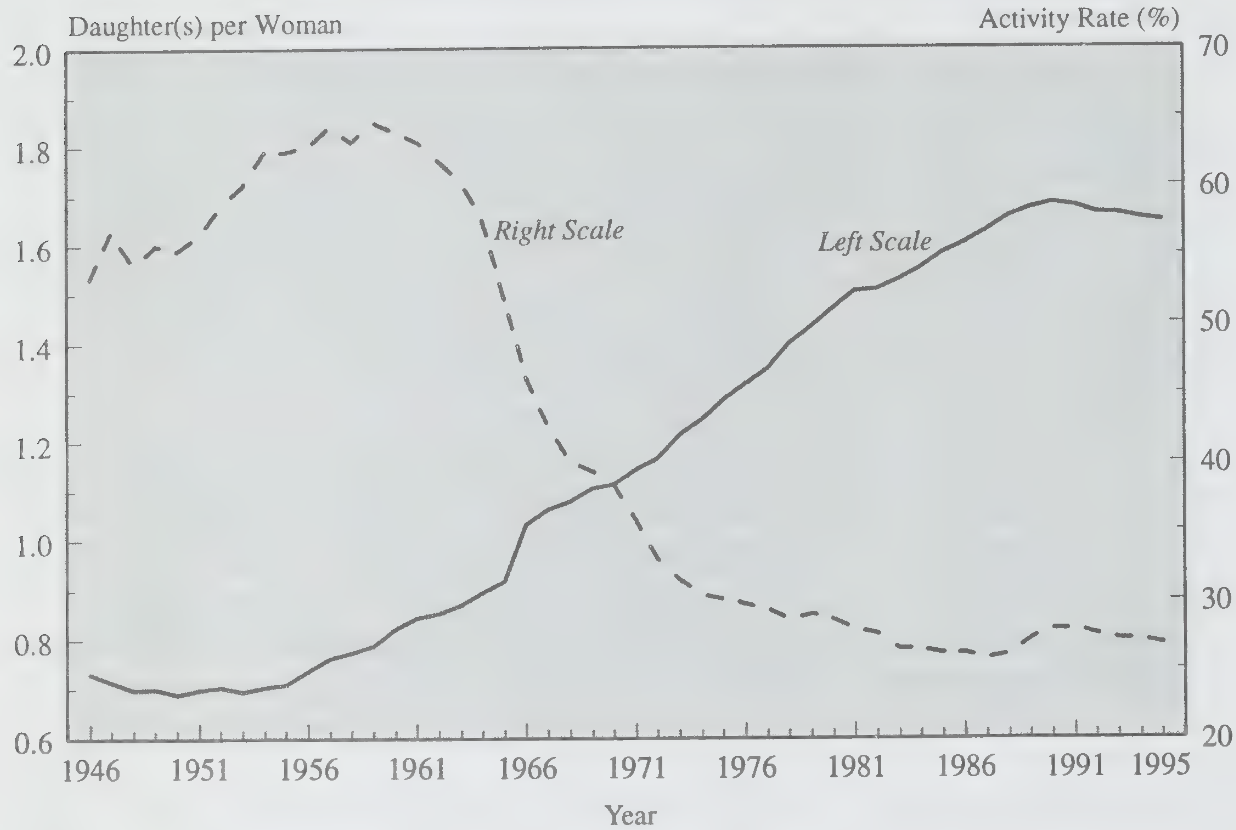
Over the period 1921-1951, women's relative income evolved along roughly the same lines as that of men, suggesting a similar relationship with the NRR. And indeed, when the coefficient of correlation is calculated solely for the period 1921-1951, it climbs to 0.84! During that period, few women in Canada were participating in the labour force, and their incomes were generally low compared to those of men. In these circumstances, it may be that there were few incentives for women to enter the working world, even though the income gap between young women and older women was narrower than for men. The opportunity cost (in terms of lost female wages) of having a child was then relatively low in Canada, and one can imagine that necessity was probably one the most common reason for women to seek paid employment.

During the 1950s, the heart of the thirty-year period of unprecedented prosperity that Canada experienced following World War II, women's relative incomes, like those of men, rose to new heights. Young couples of the day, who were basically the parents of the baby boomers, therefore enjoyed quite attractive incomes. This was undoubtedly a major factor contributing to Canada's baby boom.

Starting in 1961, the chart shows that the relationship between women's relative income and the NRR becomes nil. Probably the explanation for this interesting phenomenon lies for a good part in the strong increase in the opportunity cost of children. Influenced by a number of factors—the slowing of wage growth, steadily rising unemployment, the possibility of obtaining attractive salaries by getting a better education, and increasingly widespread employment equity programs—women entered the labour market in massive numbers in the 1970s. As a result, the opportunity cost of children increased substantially, at the very time when men's relative income was declining, causing downward pressure on fertility.

During this period, women's income became an increasingly important component of the family budgets, and couples tended to limit their number of children in order to enable the woman to carry on an occupational activity that was often seen as necessary in the prevailing economic circumstances. These findings also point in the same direction as the studies of Butz and Ward (1979a and b), who propose a model that distinguishes between couples in which the woman carries on income-earning activity in the labour market and those in which she does not. According to them, fertility is a positive function of the man's income in couples in which the woman does not work. In couples in which the woman works, fertility is still a positive function of the man's income but a negative function of the woman's income, since the opportunity cost exceeds the positive effects associated with the additional income obtained from the woman's employment. For Butz and Ward, the strong increase in fertility after World War II was due to the substantial increase in men's wages and the low participation of women in the labour force at

Figure 5. Comparison Between Female Activity Rates and Net Reproduction Rate, Canada, 1921-1991



Sources: Statistics Canada, various Censuses of Canada and Demography Division, Research and Analysis Section.

that time. As women gradually entered the labour market, the theoretical opportunity cost of children rose more rapidly than men's wages, exerting downward pressure on households' fertility.

The analysis of Figure 4 dealt with female labour force participation over the course of the century. In demography as in economics, there is a debate on the direction of the relationship between female participation in the labour force and fertility. Was it the decline in fertility which, by freeing up time for women, allowed them to join the labour force, or conversely, was it the preference for paid work that induced women to have fewer children? Recently, Blanchet and Pennec (1996), using econometric models, showed that this second hypothesis was probably the correct one. Women now participate in the labour force out of choice or necessity. While the type of analysis presented does not serve to establish causal links, as is the case in the above-mentioned study, Figure 5 nevertheless shows the negative correlation between the NRR and female participation in the labour force, at last until 1981.

Over the studied period, low participation by women in the labour force has been accompanied by much higher fertility than when they work for pay.

In Canada, the bulk of the transition took place during approximately the period 1965-1980, that is, during the slowing of economic growth. The fact that these two patterns coincided may be seen as supporting Easterlin's theory that women gradually entered the labour market out of necessity, since their spouse's income was no longer sufficient to meet the couple's material aspirations. A cycle may also have developed, as already described by Easterlin: by participating more in the labour force, women may have increased the competition for jobs, possibly worsening the economic situation of their spouses. This could be a factor explaining the stability of the fertility rates between the mid-1970s and the mid-1990s.

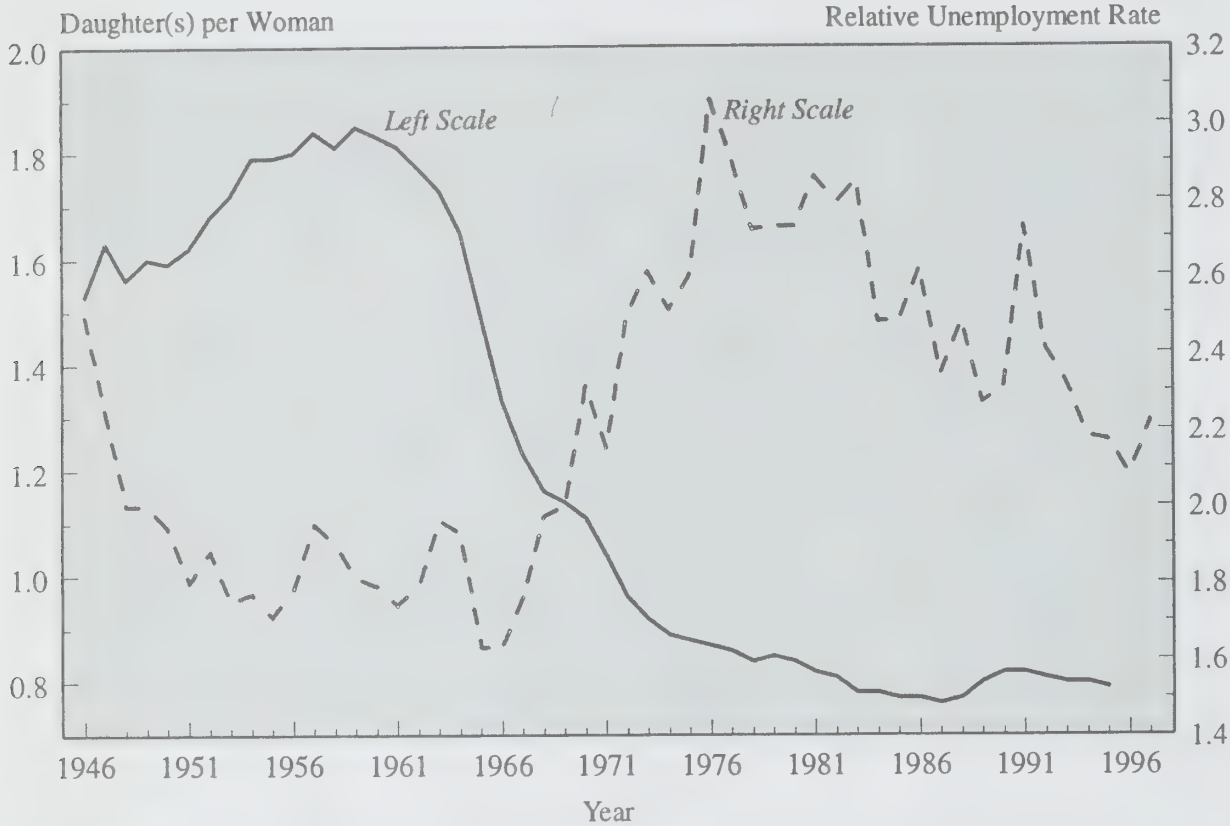
Lastly, other socioeconomic indicators such as the unemployment rate can be cited to illustrate the links between fertility and the economy. Figure 6 shows a ratio measuring the unemployment level of young adults aged 20-24 compared to that of persons aged 45-54, their parents cohort, during the same period, in relation to the net reproduction rate since 1946. This is an indicator of the difficulty of young persons' integration into the labour market; keeping in mind that the latter process is often seen as a precondition for starting a family.

By way of illustration, the figure shows the effect of the three most recent recessions, namely the ones that occurred in 1973, 1981 and the early 1990s. The young were especially affected by these events, partly because of their vulnerability due to their lack of seniority and work experience. Just as for female participation, the general appearance of the two curves clearly shows a negative relationship between fertility and unemployment. Nevertheless, caution should be exercised here, since fertility began to decline before the relative unemployment level of the young increased. On the basis of this figure, it is difficult to say whether the relative unemployment level exerted downward pressure on fertility or whether it was instead a consequence of the large number of births during the baby boom. If the latter hypothesis were correct, it would have to be concluded that this was a factor supporting Easterlin's "demographic" hypothesis, namely that the size of a cohort influences employment, at least during this period.

For the past two decades, the trend in the relative unemployment level of the young is clearly downward, while fertility has remained fairly stable at a low level. In fact, this may be further proof of the existence of a link between fertility and the labour market. The cohorts born since the end of the baby boom, who could be considered the "children of the baby boomers", are now entering the labour market. Less numerous, they exert less pressure on it, and thus, despite the economic situation, they are causing the relative unemployment of the young to gradually decline, although this is occurring too slowly to have an effect on fertility.

In conclusion, the results obtained using Canadian data support Easterlin's demographic hypothesis only for a very specific period, covering the baby

Figure 6. Comparison of Net Reproduction Rate and the Ratio of Unemployment Rate at 20-24 to Employment Rate at 45-54, Canada, 1921-1991



Sources: Statistics Canada, Labour Force Survey (LFS) and Demography Division, Research and Analysis Section.

boom and the 1970s. On the other hand, an examination of economic indicators shows some evidence for a link between the relative income of the young men and women and their fertility. These results are similar to those presented at the macroeconomic level by Kyriasis (1990) for the provinces of Quebec and Ontario. Between 1980 and 1995, Canadian males' average income fell by approximately 8% (Statistics Canada, 1998b), which did not encourage childbearing.

However, the link is complex between economic variables and fertility. Before presenting a more detailed analysis of this link for the recent period, the next section describes another major economic theory of fertility, the "*New Home Economics*". This theory is perhaps drawing more interest today than the relative income theory, since it explicitly takes account of the participation of women in the labour force and the effect of their income on fertility, and it introduces the possibility of changes over time in the opportunity cost associated with the education of children.

Theoretical issues related to the "*New Home Economics*"

The "*New Home Economics*", sometimes better known as the approach of the "*Chicago School*", counts among its adherents researchers such as Willis, Simon, Leibenstein, De Tray, Schultz and Mincer. It was founded by G.S. Becker in the early 1960s. Unlike other approaches, its purpose is not to look at major trends in relation to each other, but rather to examine the socioeconomic determinants of couples' fertility by means of an econometric analysis. In some respects, then, it is a more complete theory than Easterlin's, but it is also one that poses a number of problems.

At the outset, Becker's approach was to try to understand how the fertility behaviour of households changes when the two basic parameters of economic theory—prices and incomes—move upward or downward. While it is relatively easy to estimate the direction that households' income is moving (see Figure 1, for example), this is not the case with the "cost" of children. This subject, which is among the most controversial in the "*New Home Economics*", has led to interest in the scientific community and has given rise to a sizable body of literature in demography, economics and sociology. This aspect also serves to differentiate the two theories: whereas material aspirations are central to the relative income model, the "*New Home Economics*" puts the emphasis on the cost of children. Hence Easterlin's approach may be said to have more of a "social" dimension.

In his founding article in 1960, Becker confines himself, in his evaluation of the cost of children, to the costs incurred in bringing them into the world and rearing them to adulthood. These include expenses such as food, clothing, shelter, transportation, education, health and recreation. For Becker, and also according to microeconomic theory, the relationship between the household's income and expenditures on the child is positive: as income increases, so do the expenditures on the child. What happens then is that couples establish a trade-off between the desire to have a greater number of children (quantity) and the desire to increase the "quality" of those they already have (by allocating more resources to them). Since income/quantity elasticity is less than income/quality elasticity, Becker's originality at the time was to show that it is possible for the number of children to remain constant even if the household's income rises. The couple may, for example, opt for private school rather than public school for the first two children rather than having a third.

This first article by Becker had a major impact within that portion of the scientific community that was interested in the factors associated with human reproduction. Very soon, many other researchers, inspired by this new idea, published complementary studies. The most noteworthy contribution was probably that of Mincer (1963), who, with Becker's publication of an "update" to his theory in 1965, actually launched the "*New Home Economics*".

As a theory of household consumption, the "*New Home Economics*" postulates that on the basis of their resources of time and goods, but also on the basis of their tastes, households generate "basic commodities" that have utility, with the amount of utility depending on the qualities or attributes of those products. It should be kept in mind that initially, Becker believed that the household's utility was obtained directly from the consumption of goods, whereas here those goods are instead seen as "inputs" that are used to generate "basic commodities" or "externalities." Hence the utility (or satisfaction) that a couple derives from having a child, for example, will depend on the child's attributes or qualities, and not merely from its having come into the world.

For proponents of the "*New Home Economics*", the cost of children is therefore not limited to the expenditures made on them. There is also the price of the time—the opportunity cost—used for domestic production or, in other words, for generating and consuming "products." For Mincer (1963), for example, this price is the opportunity cost represented by a new child in terms of the woman's wages if she remains at home instead of joining the labour force. He suggests that this aspect of the cost of children has a greater influence on fertility than the expenditures devoted to them, since the expenses generated by feeding, clothing, etc. do not vary greatly over time when measured as a proportion of family income. For Mincer, the opportunity cost is therefore the factor that most influences the total price of children, especially in modern societies where the woman participates in the labour force, as was seldom the case in so-called traditional societies.

While the theory of the "*New Home Economics*" still considers fertility as a positive function of households' income, Mincer, like Becker soon afterward, introduced the idea that women's income may be negatively related to the household's fertility, unlike the men's income alone, which if it increases, has a positive influence on the demand for children.[7] This is because women have traditionally looked after the children's education. The birth of a child therefore increases women's workload (with respect to unpaid work). Since the number of hours available for work is limited, they may compensate by reducing the hours worked outside the home, thus potentially reducing the family income. This is the opportunity cost. According to the "*New Home Economics*", the effect of the opportunity cost is greater than the income effect, with the result that female income has a negative effect on fertility. This aspect, which represents the most original contribution of the "*New Home Economics*" to the study of reproductive behaviour, is the second reason why fertility may remain unchanged or even decline despite an increase in household income.

[7] Later, other authors would instead suggest that the man's income has a positive effect on the first two children only and a negative influence on subsequent children (Seiver in Simon, 1978).

The Canadian data presented in the first section of this paper do not contradict this analysis. Figure 4, for example, eloquently attests to the effect of the opportunity cost of children expressed in terms of women's relative wages. In fact, the theory of the "*New Home Economics*" applies equally well to the postwar period in Canada, since both incomes and fertility increased strongly during that period (see Figure 3). Consequently, during the latter half of the 1960s and the entire decade that followed, many studies were published under this school. Among them were those of Simon (1969) on the role of the woman's education, Willis (1974) on the concept of child quality, and Schultz (1974).

Many authors have criticized the approach of the Chicago School because of the difficulty of measuring the utility or cost that a child represents for a household. For example, the sex of the child according to its birth rank may increase or reduce its utility to its parents. Maximization of the utility function is therefore entirely relative, varying from one couple to another depending on circumstances that Becker's theory tends to overlook.

Furthermore, the decline in fertility could well result more from a decrease in the social utility of children than from economic considerations. With the welfare state, it appears no longer to be necessary to have children to look after one in one's old age, both economically and in terms of social support, or to provide labour, functions assigned to children in traditional societies. While Becker initially used this argument to liken children to consumer durables in modern societies, he did not see in this a direct or sufficient reason for the decline in fertility. And yet the acquisition of other goods may strike some couples as more "viable" or "rational" than having children, regardless of their income level. For some authors, the growing number of childless couples reflects this choice.

There is a sizable body of literature on measuring the cost of a child, whether in terms of the expenditures devoted to them or their marginal cost. Some stress the difficulty of this measurement, and it must be admitted that there is still no consensus on the methodology to use. How, then, can it be stated with certainty that the cost of a child has increased or decreased during a given period of time? Measuring the quality of a child runs into the same problems. And why, as the "*New Home Economics*" claims, would couples now invest in the quality of their children rather than their quantity? Of course, the proponents of this school suggest that the utility of a "high-quality" child is greater, but other factors—some of them beyond the parents' control, such as health—undeniably come into play here.

Lastly, the neoclassical theory of the Chicago School has not stood up well to empirical evidence, especially in the past two decades. Researchers seeking to apply these models have many problems understanding why fertility remains below the replacement level. For example, some argue that the opportunity cost of children has recently declined, with no apparent effect

on couples' fertility. For the moment in this field, it must be concluded that the findings are often contradictory, and the results vary depending on the method used.

An Integration of the Two Economic Models of Fertility

Despite its theoretical interest, the "*New Home Economics*" has been roundly criticized. Many of the criticisms also apply to the Easterlin theory. The most important criticism to this day concerns the association—seen by some as simplistic—that is made between children and consumer durables. Probably the harshest attacks on this initial hypothesis of Becker have been mounted by sociologists. They argue, for example, that the economic approach does not take account of the non-rational nature of the decision to have children (Blake, 1968). According to Blake, other variables affect the decision to have children or the choices regarding child quality. Non-economic factors such as values, the cultural environment or social norms, for example, are not taken into account in the economic approach, yet they play an important role. As Robinson (1997) recently pointed out, many couples decide to start a family without conducting an elaborate economic analysis of their situation. In the decision to have children, a major role is played by non-rational elements that elude the theory developed in the "*New Home Economics*". The hypothesis of this school of thought, namely that households make rational decisions regarding fertility just as they do for other aspects of their lives, therefore seems imprudent in a number of respects.

Beyond the charge that the economic models of fertility are simplistic, the criticisms do not fail to point out that these two theories, however attractive they may be, have failed to fulfil their main objective: to anticipate how fertility would evolve in the 1980s and 1990s. According to Easterlin's cyclical model, there should have been a reversal of trend and fertility should have increased during the 1990s as the less numerous baby busters entered the labour market. By contrast, the proponents of Becker's theory predicted a steady decline in fertility, reflecting the increased opportunity cost associated with the rise in female income, which would itself result from the increase in women's average level of experience in the labour market, their increased education level and the changes in their employment structure. And yet as we know, fertility has remained relatively stable over the past two decades, both in the United States and in Canada.

Perhaps because these two models portray fertility as moving in different directions, they are often contrasted with each other. Some authors have tried to assess which of the two best met the test of empirical evaluation. According to a review of the literature on the subject, Easterlin's model is considered to explain only the period 1945-1980 in the United States (Pampel and Peters, 1995). As to studies focusing on the "*New Home Economics*" model, their findings have proved to be inconsistent and often contradictory.

Very few authors have tried to take the theoretical aspects of the two models and incorporate them into a single model. Among them, Abeysinghe in a paper published in 1993 and using Canadian data, proposed a model where changes in fertility rates are related to variations of the income of younger male family heads, older male family heads and the female weekly wage. More recently, Macunovich (1996) proposes a new formulation that combines the main arguments of the two theories and attempts to overcome their respective limitations. To incorporate Easterlin's hypothesis that material aspirations rise over time from one generation to the next, Macunovich includes a relative measure of young males' income in her model. To incorporate the hypothesis that women's income has a negative effect on fertility (owing to the opportunity cost), she includes a variable that takes account of changes in the female wage. An additional, and even more important, feature of a model thus constructed is that it can be used to determine whether an interaction exists between these variables: it is possible that taken independently, these variables will not stand up to empirical testing because they are linked. For example, the effect of the female wage on fertility might change following a sizable drop in young males' relative income.

The model developed by Macunovich (1996) yielded interesting results for the United States over the period 1969-1993. The variables used explain almost all the changes in fertility during the study period ($R^2 = 99\%$). Furthermore, the coefficients of relative income (RY) and the female wage (W) move in the direction expected: a rise in young males' relative income results in a rise in fertility, and conversely, a rise in the female wage exerts downward pressure on fertility.

The most original aspect of the study undoubtedly lies in the results obtained for the variable measuring the interaction between RY and W. This interaction shows that the effect of the female wage on fertility varies according to whether male relative income is rising or falling. It suggests that in a period when male relative income is high, the opportunity cost, measured in terms of the female wage, is greater than the income effect, and the relationship between the female wage and fertility is negative (Macunovich, 1996: 239). In this situation, if the woman decides to engage in an occupation, this will be more a matter of choice, which may imply that the couple is voluntarily limiting the number of children that it will have.

As a corollary, when young males' relative income is low, an increase in the female wage will result in a sizable increase in couples' income, enabling them eventually to have the children that they desire. The "income" effect of the female wage increases relative to the "cost" effect; this may even reverse the situation, so that the female wage becomes positively associated with fertility. In this situation, couples assign more importance to this extra income in their decision as to whether to have a child, and any decrease in the female wage

will have the effect of creating downward pressure on fertility, since the combined incomes of the man and the woman are no longer sufficient to provide them with the living standard or number of children desired.

The model developed by Macunovich is probably the first evidence that the theories of Easterlin and Becker are in fact much more complementary than opposing. Using this model that includes both male relative income and the female wage, Macunovich managed to reproduce almost exactly the curve representing the change in fertility in the United States between 1969 and 1993. Surprisingly, her model was sensitive to the fertility boomlet in the late 1980s. Even the backward projection to 1955 yielded results that were surprisingly accurate. Thus it may be that such a model, if it proves accurate, can shed light on how fertility may evolve in the near future in developed countries.

Canada and the United States have many things in common. The movements in the Canadian economy tend to be closely tied to the American economy. The two countries also exhibit similar fertility patterns over time: a secular decline, the shock of the Great Depression, a substantial baby boom period, a baby bust and the same brief upturn in fertility in the late 1980s, although the levels were fairly different. The type of statistical data collected by the two countries is also similar in many respects: Canada's vital statistics, censuses, Labour Force Survey, Survey of Consumer Finances, etc. all have an American counterpart. On the other hand, the United States and Canada differ in certain respects, especially with regard to the design and application of a social safety net (unemployment insurance, health insurance, welfare, family allowances, etc.). Higher education, an important variable in the model proposed by Macunovich, may be more accessible in Canada. In these circumstances, it is tempting to examine whether the model proposed by Macunovich is as successful when tested on Canadian data.

The Model

The model proposed by Macunovich (1996) examines the relationship between two complex macroeconomic variables observed over a long period. The original model suggests that the fertility of women between 20 and 24 years of age basically depends on three parameters: young males' relative income, young females' wage (a proxy for the cost in time that the arrival of a child represents, also called the "opportunity cost"), as well as the female unemployment rate.

In accordance with the basic postulates of Easterlin's model, it is expected that young males' relative income will be positively associated with fertility; in other words, a relative increase in their income should result in increased fertility. The wage of young females serves as a proxy for measuring the opportunity cost associated with having children and educating them. The higher the wage, the greater the downward pressure on fertility. It is assumed,

firstly, in accordance with Becker's theory, that the negative effect of this opportunity cost on fertility is greater than the positive effect of the extra income associated with the woman's employment. It is also assumed that there is a possible interaction between the first two variables as noted. Lastly, the "unemployment rate" variable used in the model serves to control for the impact of economic shocks on period fertility.

Definition of the Variables Used in This Study

It is generally difficult to reproduce the original model exactly, especially because the data used are not identical. For the purposes of this study, a number of changes had to be made to the variables to adapt them to the Canadian situation. This section includes a brief description of the way these variables were constructed.

Fertility

The dependent variable in the study conducted by Macunovich was the fertility rate of women between 20 and 24 years of age. In the present study, it was considered preferable to use the fertility rate of women between 20 and 29 years of age. This decision was made in order to take account of the fact that the average age of women at the birth of their first child has been rising for the past 30 years in Canada. Factors that have contributed to this rise are more years of schooling, greater difficulty integrating into the labour force and job insecurity. Nevertheless, roughly 50% of a woman's completed fertility rate is attained before age 30, and this is an additional reason to use the fertility rate for women between 20 and 29 years of age (admittedly not the rate usually considered) as the dependent variable.

Relative Income (RY)

In Part 1 of this article, relative income was obtained using raw data from Canadian censuses. The income of young males between 20 and 34 years of age was compared to that of older males, aged 45-64. While simple, this indicator is satisfactory, since it allows for a temporal comparison over a very long period. However, it does not allow us to take account of major changes in the labour market over the past four decades. In particular, cohorts entering the labour market are increasingly educated, and this may have resulted in an increase in their incomes, without that increase indicating a real change in remuneration. Another factor is that on average, entrants are tending to be older because they have spent more years obtaining an education. Because the world of work has changed considerably in Canada in the past 40 years, it seems preferable to construct a more specific indicator that serves to separate out the effect of the increase—or decrease—of relative income, controlling for other factors.

Macunovich's Model

The model developed by Macunovich (1996) takes the following form:

$$\Lambda(f.^{t}_{20\text{-}24}) = \beta_0 + \beta_1 \log RY_{(t-1)} + \beta_2 \log W_{(t-1)} + \beta_3 (\log RY_{(t-1)} * \log W_{(t-1)}) + \beta_4 U_{(t-1)}$$

where the dependent variable $\Lambda(f.^{t}_{20\text{-}24})$ is a logistic transformation[8] of the fertility rate of women between 20 and 24 years of age. The coefficient β_0 represents the constant of the model, and the following coefficients, namely β_1, β_2, β_3 and β_4, are the values of the parameters estimated for each variable RY (young males' relative income), W (the wage of young females) and U (the unemployment rate of young females). The interaction term (RY * W) serves to take account of the possibility of a change in the effect of W when RY moves upward or downward. The estimate of the parameters is obtained using the ordinary least squares (OLS) method.

Macunovich proposes to measure the effect of the change in young males' relative income on fertility using a complex variable, called RY for "relative income." For the Canadian context, this variable was constructed using information from two Statistics Canada surveys, the Labour Force Survey (LFS) and the Survey of Consumer Finances (SCF). Like the variable presented in Part 1 of this article, relative income is a proportion based on the income of young males when they enter the labour market in relation to the income of age cohorts representing their fathers' generation.

In order to take account of changes in education levels in the past four decades, the numerator of the RY variable represents the average annual income of men during their first five years of potential work experience. Obviously, these first five years vary according to the number of years of education that an individual has: if he has elementary or secondary schooling with no diploma (less than 9 years of education), his first five years of potential work experience are between ages 16 and 20. By contrast, the potential first five years of work of males who hold a university degree or higher are between ages 23 and 27. Between these two extremes, two other education levels are identified: individuals with between 9 and 13 years of education, with or without

8 Logistic transformation consists in taking the Napierian logarithm of P / (1-P) where P is the probability that the observed event will occur (in this case, P is the fertility rate).

a high school diploma, and those who have studied at the post-secondary level without obtaining a university degree. Their potential first five years of work are then respectively between ages 19 and 23 and ages 22 and 26.

The average annual incomes of the individuals in each of these four groups were obtained from the SCF and were indexed according to the Consumer Price Index (CPI) in order to convert them to 1991 constant dollars. These constant-dollar incomes were then weighted, in a sense, by an approximation of the employment rate[9] for the corresponding age group and education level, so as to take account of the effect of cohort size on labour force participation and the unemployment rate. The average of these incomes therefore gives the numerator of the RY variable, which represents the real average annual income of young men when they enter the labour force.

The time series that we used goes from 1971 to 1997. During that period, some concepts underwent major changes, making it difficult to compare the data. In particular, the questions for ascertaining the respondent's highest level of education, a key variable in the model that we proposed to estimate, were changed in 1975 and 1990, and it was therefore impossible to obtain fully equivalent education categories for the entire period. The four categories that we used are the most comparable groupings that we could obtain. In any event, the lack of perfect correspondence is not overly troubling, since this variable is used only to calculate ratios for certain education categories; because the numerator and the denominator both suffer from the same potential bias, that bias would seem to be largely cancelled out.

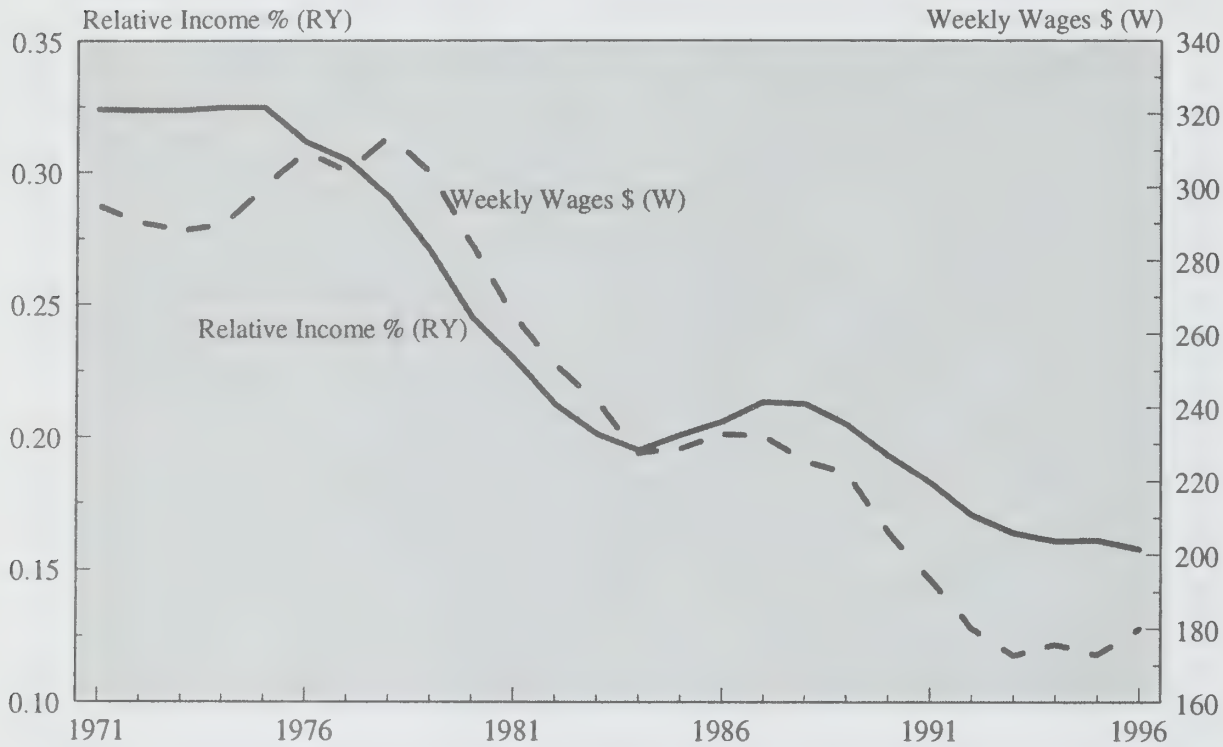
Turning to the denominator of the relative income (RY) variable, it consists of the average income of families that have at least one child 18 years of age or younger and are headed by a person between 45 and 54 years of age. By using family income, and not just the father's income, we were able to take account of how family income has been affected by increased female participation in the labour force over the past four decades in Canada. For these families to be considered representative of the families in which the young males in the numerator of the RY variable grew up, a five-year lag was introduced in relation to the numerator. This means that the material aspirations of young men are estimated on the basis of the living standard enjoyed by families whose head was between 45 and 54 years of age five years earlier. The denominator was also indexed according to the 1991 CPI to control for income variations due to inflation.

Figure 7 shows the curve of the five-year moving average of young males' relative income during their first five years of potential work experience since 1971 in Canada. The value of this ratio fluctuates between 0.33 at the start

---

[9] This consisted of the number of employed individuals divided by the number of individuals in the population corresponding to the age group and education level.

Figure 7. Male Relative Income (RY) and Average Weekly Wage of Women Controlling for Changes in Educational Levels (W), Canada, 1971 to 1996



Sources: Statistics Canada, calculations by the authors from the Labour Force Survey (LFS) and the Consumer Finances Survey (CFS).

of the period and 0.16 at the end of the period. If this indicator is correct, then young males' relative income in Canada has been cut by half since 1971. In other words, young males' income, expressed as a proportion of the family income of the families in which they grew up, fell substantially during the study period. The bulk of the decrease was concentrated between 1975 and 1985, suggesting that young men suffered more than older ones from the effects of the recession of the early 1980s. There is every indication that following a slight recovery that peaked just before the recession of the early 1990s, the indicator resumed its steady decline and is now levelling off. On the basis of the most recent observations, it would be tempting to conclude that young males' relative income has basically stabilized at a low level (0.16).

The results obtained here seem consistent with those in Figure 4; and they also appear to be consistent—although they are more pronounced—with findings already published by Statistics Canada (Morissette, 1997; Kapsalis, Morissette and Picot, 1999) indicating a decline in young people's real wages. Similarly, they are consistent with the trend observed in the United States in the findings reported by Macunovich (1996). The similarity with the evolution of young American males' relative income, which also showed an unexpected

rise over the period 1985-1990, tends to confirm the accuracy of the calculation using Canadian data. Since the American and Canadian economies are closely linked, the indicators for the two countries could be expected to correspond relatively closely.

The Female Wage (W)

Ideally, this variable should reflect only market wages (expressed as annual, weekly or hourly wages) for the work performed by women, with their education level, the nature of their jobs and their work experience held constant. If the model did not control for women's education level, which has risen considerably in Canada in the past 50 years, or the nature of the jobs that they hold, which has also greatly changed in recent decades, the W variable could tend more to reflect a change in these parameters than an actual change in the female wage.

The W variable is defined here as the average weekly income of women working full-time during their first five years of potential work experience. The average incomes obtained during the five years that generally follow the age at which a person completes her education for a given education level[10] were then weighted by the inverse of the unemployment rate so as to take account of possible problems integrating into the labour force. These data were then indexed to the 1991 CPI, after which they were standardized according to the education level of the female population in 1971.[11] Lastly, as with relative income, a five-year moving average was calculated to eliminate random variations in the indicator and to make it serve as a measure of the expected income of women in the labour force.

Figure 7 shows the curve of women's average annual wages during the past 25 years, controlling for changes in their education level. It appears that until the end of the 1970s, the female wage was rising very slightly. Those years were probably the end of a major growth period for this indicator, since the American data presented by Macunovich (1996) show a very strong increase between 1965 and 1973. Two periods of decrease are visible, with the greatest drop occurring during the first half of the 1980s. It should be recalled here that during the same period, young males' relative income was also steeply declining, showing the extent to which the recession of the early 1980s affected young persons—males and females alike—who were entering the labour market at that time. More recently, at the start of the 1990s, women experienced

---

[10] The age groups are the same as for males: 16-20 years for individuals with less then 9 years of schooling, etc.

[11] This operation serves to control for women's increasing level of education during the period: by taking the proportions that existed in 1971 and applying them to all the years in the study, we eliminated the effect of the substantial increase in women's education level on their incomes over the period.

another period of declining wages. However, it was not as lengthy, because starting in 1993, the trend appears to have stabilized and even started to rise quite recently.

It must be concluded that between these two periods of decline, there was relative stagnation of the female wage, which—contrary to data that do not control for changes in women's level of education or experience—never moved upward between 1979 and 1996. These results differ substantially from the American data obtained by Macunovich (1996). The latter found instead that there had been cyclical fluctuations since the mid-1970s, even though the general trend was generally downward. In Canada, it must be recognized that the female wage moved in a direction similar to that of young males' relative income, with periods of decline or stagnation occurring at the same time in the two variables.

Unemployment Rate U

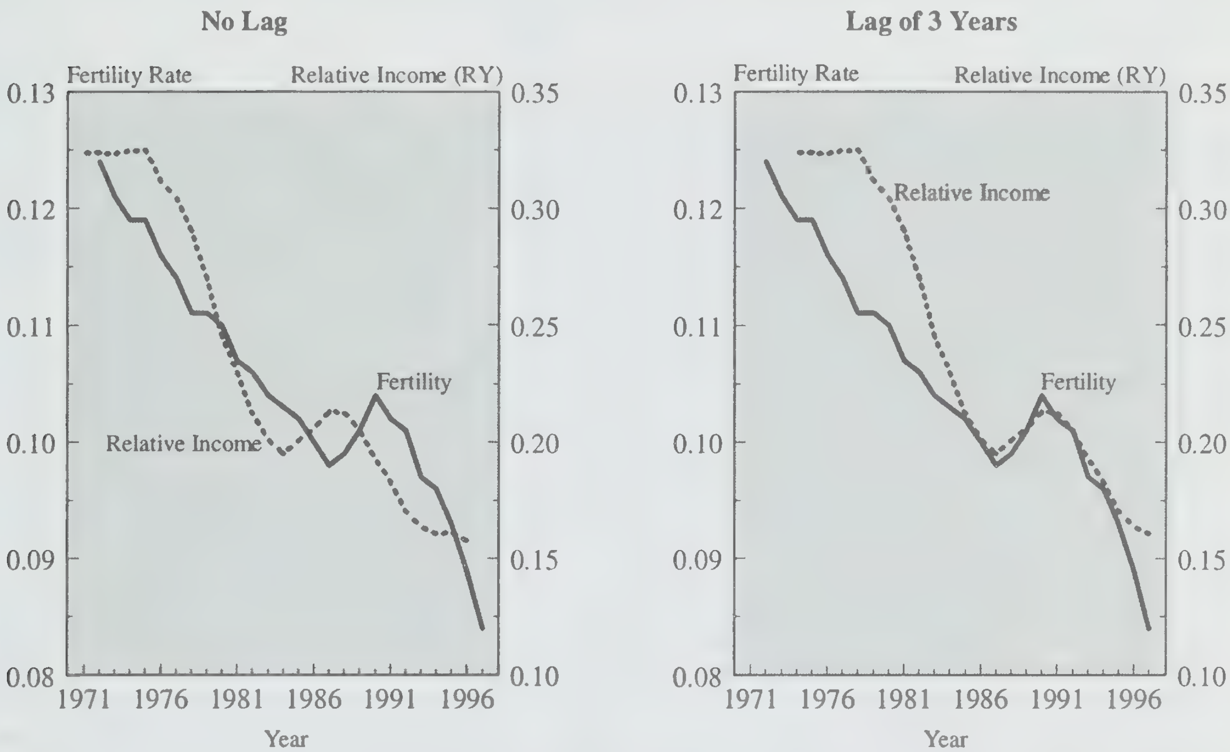
Since the model incorporates the unemployment rate of women between 20 and 24 years of age, it can take account of economic shifts in the job market, which can have a major impact on fertility. The female unemployment rate is used in preference to the male rate because studies have shown that it has a greater influence on fertility (Macunovich and Easterlin, 1988). No moving average was calculated here, so as to capture all fluctuations, even those confined to a single year, that affected the job market during the study period.

Results

As we saw previously in Figure 4, when the fertility and relative income curves are superimposed, the fit is reasonably good: the two curves are similar, with decline and growth occurring in nearly the same periods (Figure 8). Nevertheless, the apparent lag between the two curves should be noted: while male relative income started rising in 1984 following a long period of decline, the corresponding recovery in fertility did not occur until three years later, in 1987. Clearly, the increase in income did not affect fertility until three years later in Canada. If the relative income curve is shifted by three years (that is, so that relative income for 1984 corresponds to fertility for 1987), the fit between these two variables is better (Figure 8). The same phenomenon is also confirmed between the female wage and fertility.

It should be noted that Macunovich, in her model, also introduces a lag—one year in her case—between relative income and fertility. This is because couples do not immediately adjust their fertility behaviour to a more favourable financial situation. Not only is there the time it takes to conceive, but also the pregnancy period and the time required merely to decide to have a child. At this stage, however, it is not possible to say why the lag is apparently greater in Canada than in the United States.

Figure 8. Fertility Rates at Age 20-29 and Relative Income of Males in their First Five Years of Potential Work Experience (RY), Canada, 1971-1997



Sources: Statistics Canada, calculations by the authors from the Labour Force Survey (LFS) and the Consumer Finances Survey (CFS) and Demography Division.

The multivariate model presented here serves to show the effect of all the variables on fertility (Table 1). As in Macunovich's study, the model's coefficient of correlation (R^2) is extremely high for a social science study (0.95), indicating the strength of the relationships involved. It means that a remarkable 95% of the changes in fertility are explained by the variables included in the model.

The parameter estimated with respect to relative income (14.07) is highly significant and positive, confirming the directly proportional relationship that Easterlin saw as existing between this variable and fertility: a decrease in relative income leads to a reduction in fertility. Also highly significant, the parameter of the "female wage" variable is nevertheless negative, this time confirming the theories originally developed by Becker.

It may also be noted that the unemployment parameter is positive, suggesting that the higher the unemployment rate is, the higher fertility will also be. However, this result is not significant in the model.

The interaction term RY*W is also highly significant and negative. This means that in Canada as in the United States, the effect of the female wage varied during the study period as a function of changes in young males' relative income: when the latter is high, the effect of the female wage on fertility is

Table 1. Regression Model

Variables	Model's Parameters	Level of Significance
Constant (β_0)	8.84	***
Relative Income (RY)	14.07	***
Female Wage (W)	-4.20	***
Interaction Term (RY * W)	-5.24	***
Female Unemployement Rate (U)	0.39	N.S.
Adjusted R^2	0.95	...
Number of observations	23	...
Durbin-Watson Statistic	1.88 [1]	...

N.S.: Not significant.

*** = Significant at < 0,001.

[1] The Durbin-Watson statistic determines whether there is autocorrelation in time series data such as these. Autocorrelation means that the value of the residual error at time t is correlated with the corresponding value at time t-1. While it does not bias the regression parameters, autocorrelation prevents us from obtaining accurate variances or significance thresholds and valid standard deviations. A first regression on the original data yielded a Durbin-Watson statistics of 1.2, which is not sufficient to prove autocorrelation but is also too high to reject this hypothesis. Therefore the Cochrane-Orcutt correction method was used. It significantly improved the Durbin-Watson statistic, which then indicated that there was no autocorrelation in the time series. The parameters shown here, while very close to the initial parameters, are nevertheless the ones obtained with the Cochrane-Orcutt procedure. For details regarding this procedure, see Neter, Wasserman and Kutner (1990).

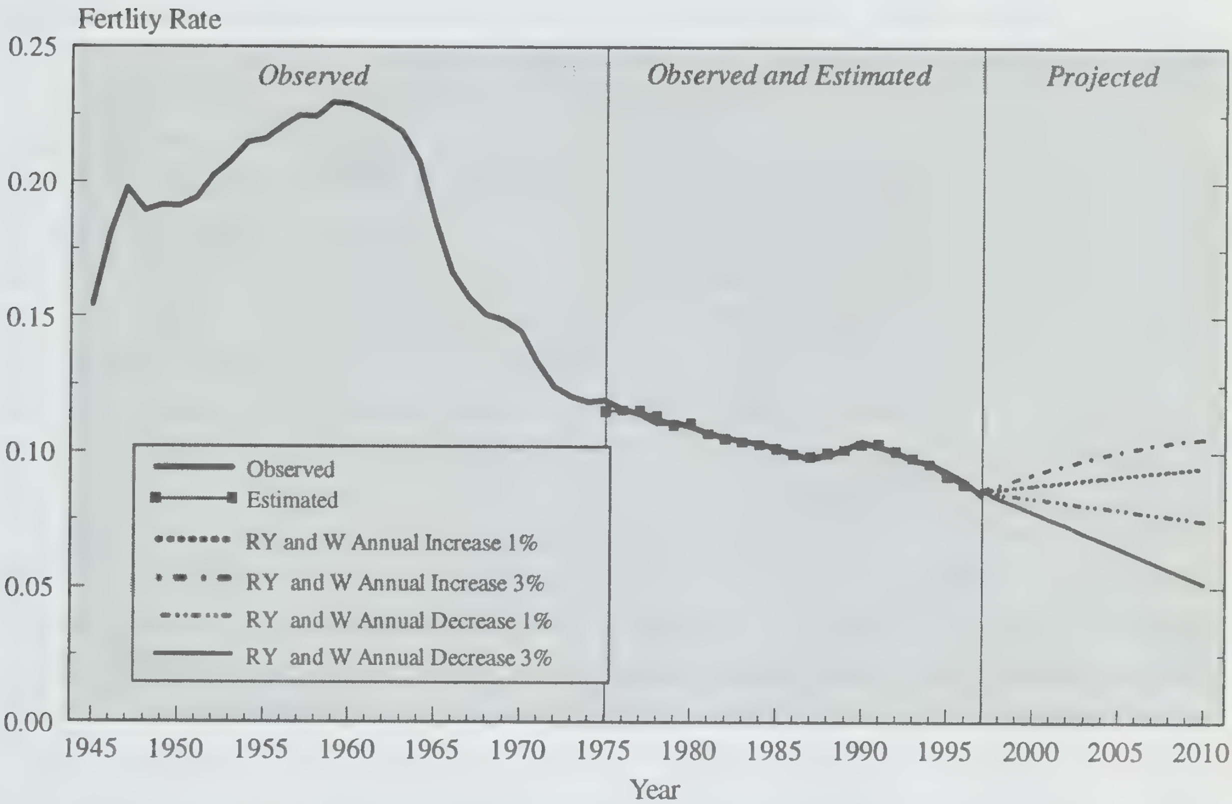
negative. Conversely, the female wage becomes important when male relative income is low. In other words, the negative coefficient means that the effect of the female wage on fertility can take different directions depending on the level of male relative income.

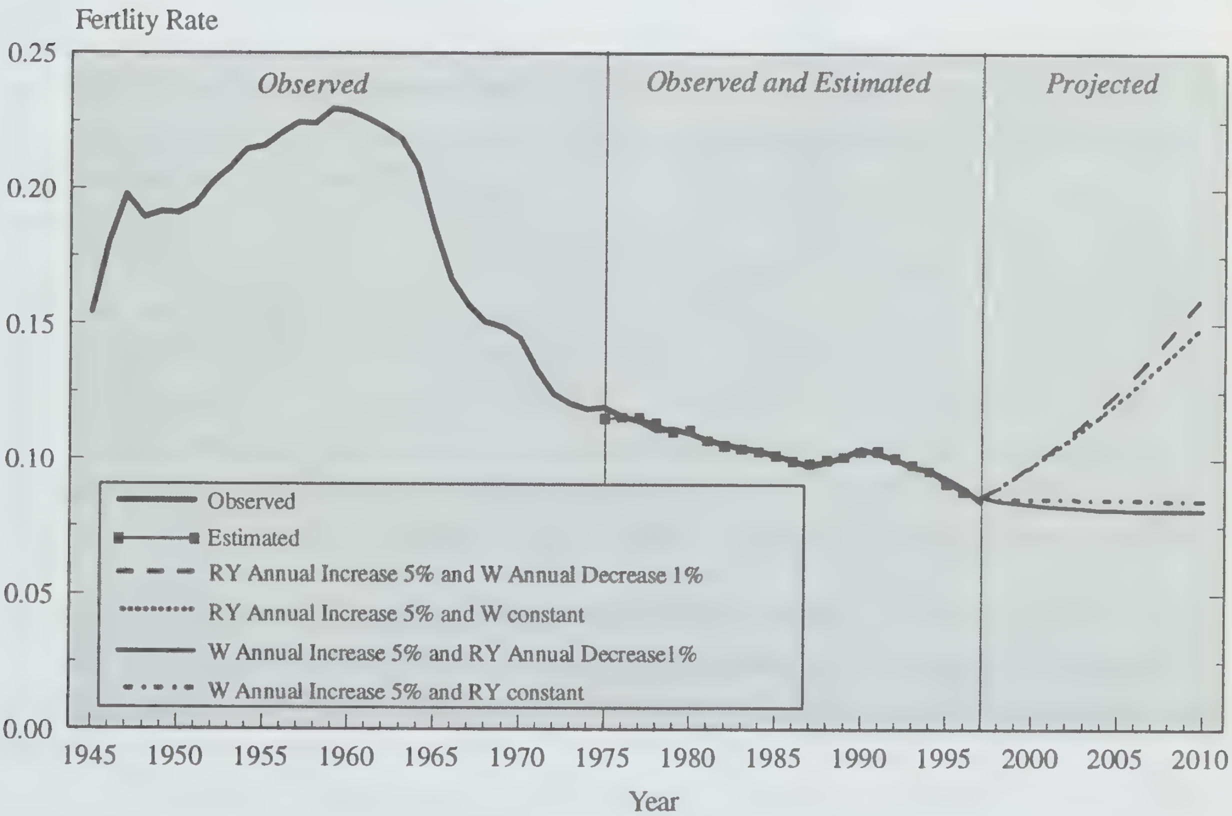
In Figure 9, the curve for fertility during the period 1975-1997 is superimposed on the curve estimated by the model; the figure shows how closely the latter manages to replicate changes in fertility. The reader can see just how strong the correlation is between the two series, since the model even manages to take account of the slight upturn in fertility in the late 1980s.

Such results suggest that the model may be used to simulate possible future changes in fertility according to various hypotheses as to the future direction of relative income and female wages. Figure 9 shows eight possible scenarios offering a range of results as to possible future directions for fertility rates between ages 20 and 29 in Canada.

Since relative income and female wages have been moving in the same direction for the past 30 years in Canada, this is how the first four scenarios also project them as moving, with average annual increases of the same magnitude for the two variables: -3%, -1%, 1% and 3%. The scenario that is undeniably the most unfavourable from a fertility standpoint is the one in which

Figure 9. Observed, Estimated and Projected Fertility Rates at Age 20-29 According to Different Scenarios of Variation in Male Relative Income (RY) and Average Weekly Wage of Women Working Full Time (W), Canada, 1945-2010





Sources: Statistics Canada, calculations with data from the Labour Force Survey (LFS) and the Consumer Finances Survey (CFS) and Demography Division.

relative income and the female wage decrease by 3% per year until 2010. Broadly speaking, this would be a continuation of the downward trend of fertility that began in the early 1990s. However, it is hard to believe that the fertility rate of women between 20 and 29 years of age could continue to decline in this manner. A threshold will probably be reached soon, beyond which further reduction would be very unlikely.

With a decrease of 1% per year between now and 2010 in young males' relative income and the female wage, the downward trend in fertility would continue, but at a slower pace. At the end of the projection period, the fertility rate of women aged 20 to 29 would be 0.075, or 75 births per 1,000. Assuming that the tempo of fertility remains the same as in 1997, this would result in a total fertility rate of approximately 1.3 children per women in 2010. At this point, such a scenario seems possible and realistic, since some regions of Western Europe—eastern Germany or northern Italy, for example—have already reached even lower fertility levels.

Once a recovery is envisaged for the model's two main variables, fertility starts back up. It rises very slightly in the case of a 1% growth in young males' relative income and the female wage, and more substantially if that growth reaches 3%. In the latter case, the fertility rate of women 20-29 would reach 110 births per 1,000 women in 2010, which is equivalent to roughly 2.0 children per woman if the tempo of fertility were to remain the same as in 1997. This threshold is very close to the replacement level.

Under the last four scenarios, young males' relative income and the female wage move in opposite directions. While these scenarios are somewhat less likely in reality, they are primarily included as a sensitivity test of the impact of the model's interaction variable. According to the model, the future trend of fertility appears to be much more sensitive to changes in young males' relative income than to changes in the female wage. A rise of 5% in the latter variable generates almost no effects, whereas a comparable increase in young males' relative income during the period 1998-2010 causes the fertility rate to reach approximately 160 births per 1,000, a level observed in the 1920s and exceeded only during the baby boom. Assuming that the tempo of fertility remained the same as in 1997, the resulting total fertility rate would be 2.9 children per woman, well above the replacement level.

The factor that distinguishes the two sharply rising curves in Figure 9 is the female wage: in one case, it falls by 1% per year, while in the other it remains stable. There are few perceptible effects on fertility, and as expected, there is a negative association between fertility and the female wage when male relative income is high. Lastly, since young males' relative income is positively associated with fertility, the scenario in which it decreases by 1% per year while the female wage rises by 5% per year would yield the lowest fertility projection of these four scenarios.

Discussion

While the results presented in this study are consistent with Macunovich's findings for the United States, they nevertheless differ in some respects. The greatest difference is definitely the importance in Canada of the variable "RY", young males' relative income. In the United States, Macunovich found that the "female wage" variable was more important.

The results obtained in Canada tend to confirm the theories advanced by Easterlin and Becker, since the direction of the relationships is as they predict. The new element contributed by the significant interaction between the two study variables suggests that the female wage not only has a negative "cost" effect on fertility but it also has an "income" effect. Which of these two effects predominates will depend on the man's relative income level. If the latter is low, the "income" effect will predominate, since the woman's wage will enable the couple to increase their total income significantly and thus give them the opportunity to have children if they so desire. Conversely, if the man's relative income is high, a couple may have less need of this second income. The latter is then a matter of choice, and the couple may opt for a second income in order to fulfil higher material aspirations, sometimes at the expense of fertility.

This research suggests that the decline in young males' relative income during the 1970s and 1980s made it more necessary for couples to be able to count on two incomes to satisfy both their constantly rising material aspirations and their aspirations with respect to fertility. Young couples adapted to this decline, and in particular they postponed their childbearing plans to later years in their lives. According to Abeysinghe (1993), changes in the timing of births are more related to the movement of female wages than to variations of the relative income of young men.

The model used in this study is of interest in many respects, since it enables researchers to reconstruct the change in fertility for ages 20 to 29 in Canada over the period 1975-1997, using only two variables. This attests to the strength of the links that exist between fertility and income. However, a few words of caution are in order here. First, other variables that are just as important can obviously influence couples' decision as to whether to have a child. Sociological or demographic variables that the model does not take into account, such as the number of children already born, the values of individuals, the norms of the society in which they live, religion, etc. can have a significant effect on fertility. Similarly, other economic variables that may play a role were not tested here. One such variable is job insecurity, which most certainly has a major effect on young couples' fertility. The birth of a child has implications over a long period, and even if a couple's current income may seem sufficient to decide to have a child, it is entirely possible that this decision will be postponed owing to uncertainty regarding the stability of the job held. Calculations based on the Survey of Consumer Finances show that between 1969 and 1996, the

proportion of young males (aged 25-29) working full-year full-time fell from 75% to 64%. The objective of this study was not to develop a general theory of fertility but rather to verify the existence of the theoretical links thought to exist between fertility and the income of young couples.

A second point to consider is that while the model yielded excellent results for Canada over the past three decades just as it did for the United States, to generalize these results into a theory of fertility requires a step that it is not appropriate to take at this stage. Other studies are necessary to test such a model on the situation of other countries that have, or have not, experienced a baby boom and a baby bust. To date, no study has been published with data from European countries, for example. It would also be useful to determine whether the model yields equally good results for different periods, such as the interwar period.

For demographers to predict the future of a population is risky. They can nevertheless develop certain possible scenarios on the basis of trends observed in the past. While keeping the limitations of the model in mind, it is interesting to look at the effect that the study variables may have on future fertility. On this subject, it seems clear that if young males' relative income and female wages were to grow at an annual rate of approximately 3% over a fifteen-year period, this would cause the total fertility index in Canada to approach replacement level by 2010.

BIBLIOGRAPHY

Abeysinghe, T. (1991). On Testing Easterlin's Hypothesis Using Relative Cohort Size as a Proxy for Relative Income. ***Journal of Population Economics***. 4: 53-69.

Abeysinghe, T. (1993). Time Cost, Relative Income and Fertility in Canada. ***Journal of Population Economics***. 6: 189-198.

Becker, G.S. (1960). An Economic Analysis of Fertility. ***Demographic and Economic Change in Developed Countries***. Princeton. Princeton University Press. 536 pages.

Becker, G.S. and R. Barro (1988). A Reformulation of the Economic Theory of Fertility. ***Quarterly Journal of Economics***. 103: 1-25.

Blake, J. (1968). Are Babies Consumer Durables : A Critique of the Economic Theory of Reproductive Motivation. ***Population Studies***. 22: 5-25.

Blake, J. and K. Davies (1956). Social Structure and Fertility : An Analytic Framework. ***Economic Development and Cultural Change***. No. 4: 211-235.

Blanchet, D. and S. Pennec (1996). Hausse de l'activité féminine : quels liens avec l'évolution de la fécondité? ***Économie et statistique***. INSEE. No. 300: 95-104.

Bourcier de Carbon, P. (1997). Fluctuations du revenu relatif et baby-boom aux USA. ***Population et Avenir***. No. 635.

Butz, W.P. and M.P. Ward (1979a). Will US Fertility Remain Low? A New Economic Interpretation. ***Population and Development Review***. 5 (4): 663-688.

Butz, W.P. and M.P. Ward (1979b). The Emergence of Countercyclical U.S. Fertility. ***American Economic Review***. 69 (3): 318-328.

Chesnais, J.C. (1986). La notion de cycle en démographie. La fécondité post-transitionnelle est-elle cyclique? ***La Transition démographique. Étapes, formes, implications économiques***. Paris. PUF-INED. Pages 187-210.

Easterlin, R.A. (1961). The American Baby-Boom in Historical Perspective. ***American Economic Review***. 51 (5): 869-911.

Easterlin, R.A. (1973). Relative Economic Status and the American Fertility Swing. Dans Sheldon, E.B. ***Family Economic Behaviour***. Philadelphia / Toronto. J.B. Lippincott Company. Pages 170-223.

Easterlin, R.A. (1975). An Economic Framework for Fertility Analysis. ***Studies in Family Planning***. 6: 54-63.

Easterlin, R.A. (1978). The Economics and Sociology of Fertility : A Synthesis. In Tilly, C. ***Historical Studies of Changing Fertility***. Stanford (CA). Princeton University Press. Pages 57-133.

Easterlin, R.A. (1997). The Story of a Reluctant Economist. ***The American Economist***. 41 (2): 11-21.

Gower, D. (1997). Measuring the Age of Retirement. ***Perspectives on Labour and Income***. 9. 2. Catalogue no. 75-001-XPE. Pages 11-17.

Grauman, J.-V. (1960). Comment. In the research paper from F.W. Notestein. ***Demographic and Economic Change in Developed Countries***. Conference of the University Press. Pages 275-284.

Kapsalis, C., Morissette, R. and G. Picot (1999). ***The returns to education, and the increasing wage gap between younger and older workers. Ottawa***. Statistics Canada. Research Paper Series from the Analytical Studies Branch. Catalogue no. 11F0019MPE. 131. 25 pages.

Kyriesis, S. (1990). Relative Economic Status and Fertility: A Comparative Analysis of Quebec and Ontario. Doctoral dissertation presented to the Department of Demography at the University of Montreal. ***Collection Thèses et mémoires***. No. 27. 324 pages.

Leibenstein, H.M. (1957). ***Economic Backwardness and Economic Growth***, New York. Wiley.

Leibenstein, H.M. (1975). The Economic Theory of Fertility Decline. ***Quarterly Journal of Economics***. 89 (1): 1-31.

Léridon, H. (1978). Fécondité et structures démographiques : une hypothèse sur l'évolution de la fécondité depuis 1940. ***Population***. 2: 441-447.

Macunovich, D. J. (1996). Relative Income and Price of Time : Exploring Their Effects on US Fertility and Female Labour Force Participation. In Casterline, J.B., Lee, R.D. and K.A. Foote (eds.). ***Fertility in the United States : New Patterns, New Theories***. Population and Development Review. Supplement to volume 22: 223- 257.

Macunovich, D.J. and R.A. Easterlin (1988). Application of Granger-Sims Causality Tests to Monthly Fertility Data, 1958-1984. ***Journal of Population Economics***. Volume 1: 71-88.

Mincer, J. (1963). Market Prices, Opportunity Costs and Income Effects. In Christ, C.F. and al. (eds.). ***Measurement in Economics : Studies in Mathematical Economics and Econometrics in Memory of Yehuda Grunfeld***. Standford. Pages 67-82.

Morissette, R. (1997). ***The Declining Labour Market Status of Young Men***. Communication presented at a Conference on equity between generations. Ottawa. Statistics Canada.

Neter, J., Wasserman, W. and M.H. Kutner (1990). ***Applied Linear Statistical Models***. Homewood and Boston. Irwin eds. Third Edition. 1181 pages.

Oppenheimer, V.K. (1976). The Easterlin Hypothesis : Another Aspect of the Echo to Consider. ***Population and Development Review***. 2: 433-458.

Pampel, F.C. and H.E. Peters (1995). The Easterlin Effect. ***Annual Review of Sociology***. 58: 496-514.

Pollack, R.A. and M.I. Wachter (1975). The Relevance of the Household Production Function and its Implications for the Allocation of Time. ***Journal of Political Economy***. 83: 225-277.

Rashid, A. (1993). Seven decades of wage changes. ***Perspectives on labour and income***. Statistics Canada. Catalogue no. 75-001-XPE. Pages 10-23.

Robinson, W.C. (1997). The Economic Theory of Fertility Over Three Decades. ***Population Studies***. 51: 63-74.

Schultz, P. (1974). Fertility Determinants : A Theory, Evidence and an Application to Policy Evaluation. Paper prepared for the Rockerfeller Foundation and the Agency for International Development. Santa Monica. Rand Corp.

Simon, J.L. (1969). The Effect of Income on Fertility. ***Population Studies***. 23 (3): 327-341.

Statistics Canada (1998a). ***Annual Demographic Statistics, 1998***. Ottawa. Catalogue no. 91-213-XPB (also available on CD-ROM).

Statistics Canada (1998b). 1996 Census: Sources of income, earnings and total income, and family income. ***The Daily***. Tuesday May 12 1998.

Willis, R.J. (1974). Economic Theory of Fertility Behavior. In Schultz, T.W. (eds.) ***Economics of the Family, Marriage, Children and Human Capital***. Chicago. Chicago University Press. Pages 25-75.

AN ANALYSIS OF THE CHANGE IN DEPENDENCE-FREE LIFE EXPECTANCY IN CANADA BETWEEN 1986 AND 1996

by Laurent Martel and Alain Bélanger[1]

At the beginning of this century, a Canadian male could expect to live an average of 47 years and a Canadian female, 50 years (Table 1). At that time, barely 38% of males and 44% of females reached the respectable age of 65 years. They could then expect to live for roughly another decade (11 years for males and 12 for females). The additional years were often lived in a difficult state of health, due to the harshness of life and the lack of health care and services.

Owing to several factors—firstly, social progress, especially in the field of public sanitation; secondly, medical breakthroughs, including vaccination; and thirdly, the technological advances achieved in the past century—developed societies have largely succeeded in conquering infectious and parasitic diseases. Because of this major revolution in the history of human populations, known to scientists as the "*epidemiological transition*", considerable progress has been made in terms of life expectancy. Thus in 1996, life expectancy at birth in Canada reached 75.5 years for males and 81.2 years for females. More than eight males in ten and almost nine females in ten will celebrate their 65th birthday. And at that point, they may expect to live respectively 16 and 20 more years, a period generally reserved for retirement!

On a world scale, Canadian males and females are in an enviable position as to their average length of life. While Japanese males and females currently hold the world record for longevity, only Japanese, Icelandic and Swedish males are ahead of Canadian males in this regard. For females, apart from the Japanese, only the French, Swedish, Swiss and Spanish enjoyed greater average longevity than Canadian females in 1996.

Such spectacular progress in the space of a century raises questions regarding the limits of human longevity. Is it reasonable to believe that life expectancy can long continue to grow at its present rate? Table 1 shows that the average annual gains, which were quite substantial throughout the first half of the 20th century for both sexes, began to decline two decades ago. This is especially true for females, whose life expectancy at birth is now growing more slowly than that of males. Is this slowing a sign that as some researchers believe, we are approaching the absolute limits of human longevity?

---

[1] The authors wish to thank Jean-Marie Berthelot and Russell Wilkins for their invaluable comments.

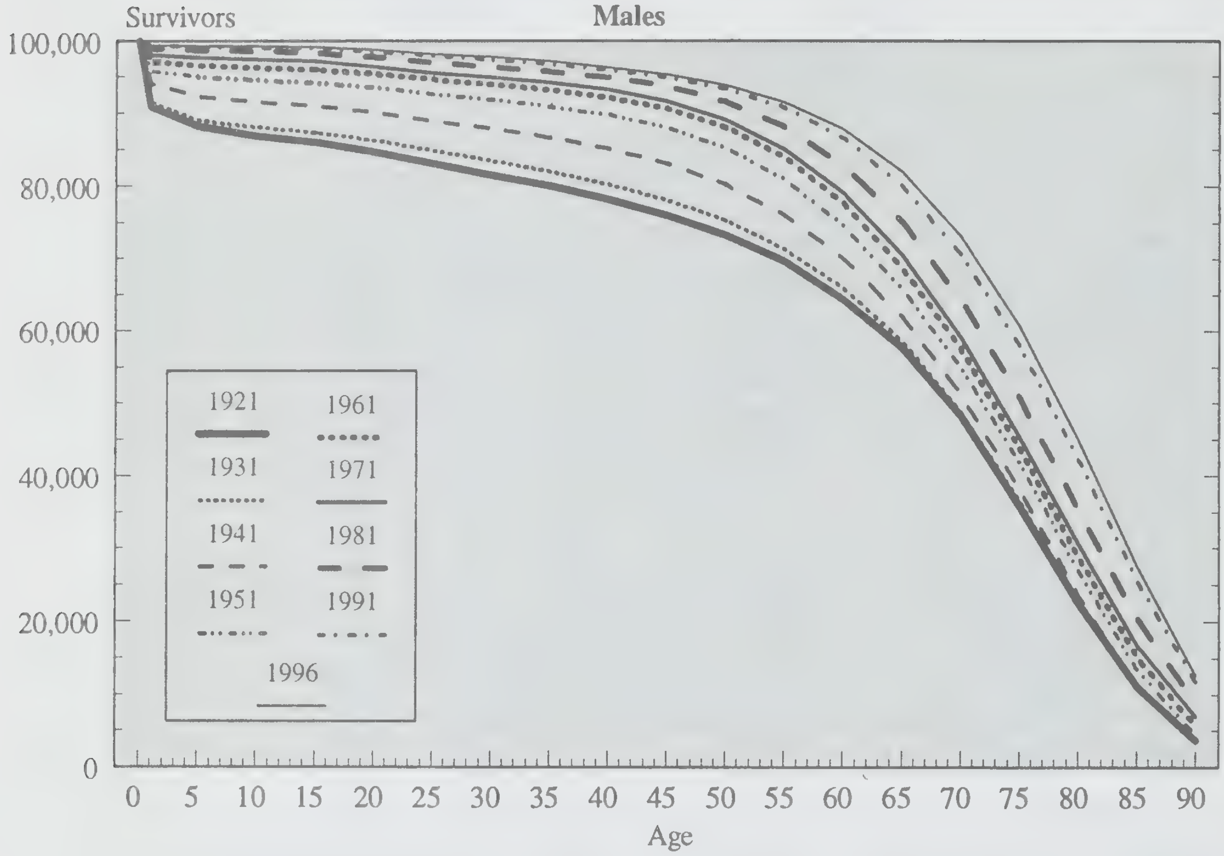
Table 1. Variations in Life Expectancy at Birth (e_0) and at Age 65 (e_{65}) during the Last Century, Canada, 1901-1996

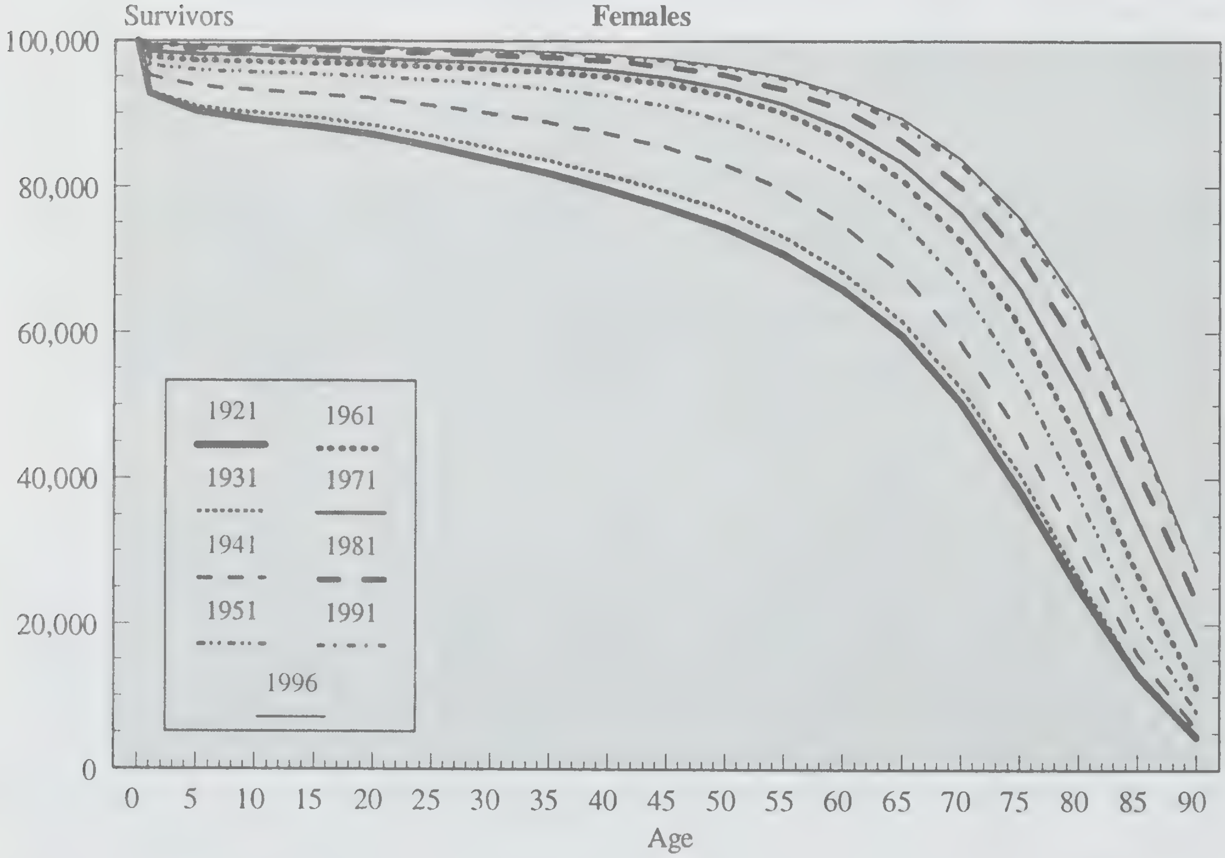
Year	Males		Females		Difference (in years) (males - females)
	Year	Average Annual Growth	Year	Average Annual Growth	
	Life Expectancy at Birth				
1901	47.1	...	50.1	...	-2.97
1911	50.9	0.37	54.2	0.41	-3.28
1921	55.0	0.41	58.4	0.42	-3.40
1931	60.0	0.50	62.1	0.37	-2.06
1941	63.0	0.30	66.3	0.43	-3.27
1951	66.4	0.34	70.9	0.46	-4.50
1961	68.4	0.20	74.3	0.34	-5.82
1971	69.6	0.11	76.6	0.23	-6.99
1981	72.0	0.24	79.2	0.26	-7.13
1991	74.6	0.26	81.0	0.18	-6.35
1996	75.5	0.17	81.2	0.05	-5.75
	Life Expectancy at Age 65				
1901	11.0	...	12.0	...	-0.96
1911	11.3	0.03	12.4	0.04	-1.02
1921	11.7	0.04	12.8	0.04	-1.10
1931	13.0	0.13	13.7	0.09	-0.74
1941	12.8	-0.02	14.1	0.04	-1.26
1951	13.3	0.05	15.0	0.09	-1.69
1961	13.6	0.03	16.1	0.11	-2.55
1971	13.9	0.03	17.7	0.15	-3.78
1981	14.6	0.08	19.0	0.14	-4.37
1991	15.8	0.12	20.0	0.10	-4.16
1996	16.1	0.06	20.0	0.00	-3.87

Sources: 1901-1921: Bourbeau, R., Légaré, J. and Émond, V. (1997). "New Birth Cohort Life Tables for Canada and Québec, 1801-1991", ***Demographic Document no. 3***, Catalogue no. 91F0015MPE, Statistics Canada. 1931-1961: Nagnur, D. ***Longevity and Historical Life Tables (abridged) 1921-1981***, Catalogue no. 89-506, Statistics Canada. 1971-1996: Statistics Canada, Health Statistics Division and Demography Division.

Various factors tend to confirm this hypothesis. An examination of the survivor curves from Statistics Canada's life tables shows a growing *rectangularization* of the curves, suggesting that it might be difficult to push the average length of life well beyond 85 years (Figure 1). Death rates before 50 years of age are reaching such low levels that further compression could prove to be impossible; this is the picture that seems to emerge when the 1996 curve is superimposed on the 1991 curve. It is after age 50 that gains against death can still potentially be substantial, even though they might very well appear to be limited, as chronic diseases replace infectious and parasitic

Figure 1. Life Table Survivors by Age and Sex, Canada, 1921-1996





Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

diseases as the primary cause of death at this stage of the epidemiological transition. For proponents of the theory of a "limited-life-span paradigm", such as Olshansky (1990, 1994) or Fries (1980, 1983), major efforts on the part of the scientific community will now be necessary to further increase life expectancy.

Other researchers, such as Vaupel (1986, 1994) and Manton (1991) suggest that human longevity will continue to grow throughout the next century and could well reach 100 years or even more! In support of their hypothesis, these scientists cite the first, highly promising results of research currently under way on the human genome and cellular aging mechanisms. These results suggest that future gains in life expectancy will be achieved, not by means of a reduction in mortality obtained through better optimization of existing technologies or knowledge, but rather as a result of revolutionary discoveries yet to come in the field of population genetics or biology.

In any event, spectacular progress in extending individuals' longevity has been achieved in the past century; but that very progress is causing some concerns within society, in particular, in terms of increasing public health expenditures. Since fertility has almost stabilized at very low levels, the prolonging of life is now a more significant factor in the aging of populations. And old age is associated with the deterioration of health, often reflected in the appearance of activity limitations, dependence and disabilities of all kinds. Too often, advances in life expectancy have been assumed to entail equivalent progress in population health. For scientists, this positive association between a reduction in mortality and a reduction in morbidity is not evident; it seems possible or even probable that when death is postponed, there is not necessarily a corresponding postponement of disease (Verbrugge, 1984; Crimmins, 1990; Olshansky et al., 1991). In other words, it is quite possible that for most individuals, the years of life gained against death will not be lived in good health but rather in a state of disability, activity limitation or dependence.

According to this hypothesis, known as the "*expansion of morbidity*", longer life expectancy is associated with a correspondingly longer period spent in a state of dependence. With the rectangularization of mortality, more individuals are now reaching advanced ages, and at those ages, degenerative or chronic diseases are still common. Less fatal, these diseases, such as arthritis and dementia, often cause a number of limitations or forms of dependence that can go on for many years. Medicine, combined with technology, is also making it easier to prolong the life of individuals subject to these diseases. In short, under this hypothesis, people will live longer, but will also spend a longer time in a state of dependence as a result of physical and mental health problems.

However, there is a more optimistic view of the situation, basically formulated by Fries (1980, 1983, 1989): the "*compression of morbidity*". According to Fries, the appearance of chronic diseases in the life of an individual can be

Indicators of Healthy Life Expectancy

On its own, life expectancy cannot be used to obtain a measure of the morbidity within a population. For this reason, new indicators have been constructed, along similar lines: ***dependence-free life expectancy*** (DFLE) and ***health-adjusted life expectancy*** (HALE).

Dependence-free life expectancy is the number of years of dependence-free life that can be expected by a fictitious cohort of individuals subject to current mortality and morbidity conditions. Implicitly, this indicator assigns a score of one to years of life lived without disability and a score of zero to those lived in a state of dependence. Health-adjusted life expectancy corrects this implicit simplification by assigning an arbitrary score, or rather a score based on the Health Utility Index (HUI), to years spent in each health status. This score varies from one individual to another, depending on his/her set of health attributes (seeing, hearing, mental health, mobility, pain, etc.). In this article, this score is the average HUI score of each age / sex / dependence states group. A HUI equal to one represents perfect health and zero represents death. The score is, therefore, lower than one for all groups and decreases with the severity of the dependency. HALE is thus probably the best measure of the health status of a population.

These indicators are basically obtained by using three different methods: "observed prevalence tables", "multiple decrement tables", and "multiple increment-decrement tables". Observed prevalence tables are easy to calculate and are currently the most widely used. The main drawback of this method is that it is based on a static measure of morbidity (prevalence) in combination with a dynamic measure of mortality (incidence). On the other hand, multiple decrement tables are strongly biased toward an overestimation of life expectancy with disability, since they consider each health status as an absorbing state, not allowing for a return to the initial state. While this characteristic poses no problem for studying mortality or chronic diseases, many individuals coping with disabilities or limitations regain their personal autonomy at some point. The last method takes this factor into account. But because it calls for calculating probabilities of transition between health states, it requires the use of longitudinal studies, which are more costly and more difficult to conduct. In this article, only the first method is used, so as to allow for comparisons over time.

postponed or even prevented by a healthy lifestyle, with regular exercise and the avoidance of tobacco, combined with the regular monitoring of health made possible by an adequate and effective health care system. In Fries' view,

since the limits of human life are a given, future progress will cause morbidity to exhibit the same pattern of rectangularization shown by mortality. In other words, the lengthening of life will be accompanied by a reduction in the years of life spent in a state of disability or dependence.

In the context of a rapidly aging Canadian population and controlled public spending on health, it would seem essential to compare these hypotheses to reality, since they imply quite different consequences. The "*compression of morbidity*" seems a desirable objective for any society to achieve. Many researchers interested in the aging of the population have already shown how maintaining individuals' personal autonomy is an effective way to contain the anticipated rise in the demand for health care and health services. If, on the other hand, the hypothesis of an "*expansion of morbidity*" should prove to be the correct one, it will be necessary to plan for a major increase in the demand for health care and services as well as beds in institutions specializing in gerontology / geriatrics. Preserving the social balances achieved under the welfare state, especially in the health field, could then pose a major challenge for Canada at the start of the next century.

In the past three decades, the scientific community has developed a number of indicators to measure the change in morbidity over time within a population (WHO, 1997). Nearly thirty years ago, Sullivan (1971) proposed an indicator of *disability-free life expectancy* obtained using the prevalence[2] of disability, which is multiplied with the person-years (stationary population) from a life table. Since then, other indicators, more sophisticated but based on the same method, have been developed, partly owing to the work of the International Network on Health Expectancy (REVES).[3] Thus, life expectancy can now be calculated adjusting for disability as well as for status of health (see Box "Indicators of Healthy Life Expectancy"). These indicators, which are easy to obtain, can be used to make comparisons both over time and between nations. However, for the past decade, some countries including Canada have been undertaking to calculate disability-free or dependence-free life expectancies using more elaborate techniques that are based on the incidence rather than the prevalence of health states. Requiring the use of longitudinal data, the calculation of these indicators provides a better estimate of disability-free life expectancy, since it is based on dynamic models that take account of not only entries to various health states but also exits from those states (Rogers, Rogers and Bélanger, 1989; Rogers, Bélanger and Rogers, 1991; Nusselder,

---

[2] Prevalence (as a static measure) refers to the number of individuals in a certain state (here a state of health) within a population, including both old cases and new cases. An opposing concept is that of incidence (a dynamic measure), which refers to the number of new cases that appeared within a population during a given period.

[3] Created by the Institut National de la Santé et de la Recherche Médicale (INSERM, France), the Conseil des Affaires Sociales (Quebec, Canada) and the Centre for Demographic Studies (Durham, USA), REVES is an international research network based in Montpellier, France, designed to develop and co-ordinate life expectancy indicators.

1998; Bélanger, Berthelot and Martel, 1999). These indicators are more complex and more costly to obtain; since the necessary data are not yet available for comparisons over time, they will not be used in this article.[4]

For many years now, studies have been done on dependence-free or health-adjusted life expectancy in Canada, based on the "Sullivan" method (Wilkins and Adams, 1983, 1992; Wilkins, 1991 and 1993; Wilkins and al. 1994; Berthelot, Roberge and Wolfson, 1993; Wolfson, 1996; Berthelot, Roberge and Cranswick, 1999). During the 1990s, however, public decision-makers have shown growing interest in these indicators, particularly in light of the recommendations of the National Task Force on Health Information.[5] Consequently, Statistics Canada created the National Population Health Survey (NPHS), which provides a complete picture of the health status of the Canadian population. This longitudinal survey, which can be used to calculate the Health Utility Index (HUI—see Box "Health Utility Index"), opens the way for calculating more complete aggregate health indicators. Because the sample size increased practically fourfold between 1994 and 1996, the estimates obtained from the NPHS in 1996 are more reliable, and when used in combination with other estimates, they serve to identify a trend in the evolution of morbidity in Canada.

This study therefore proposes to make a comparison over time between dependence-free life expectancy and health-adjusted life expectancy in Canada. For the latter indicator, the years of life lived will be weighted using average Health Utility Index values according to health state from the 1996 NPHS. These health indicators are estimated for three years, using data from three Statistics Canada surveys: the Health and Activity Limitation Surveys (HALS) of 1986 and 1991 and the National Population Health Survey (NPHS) of 1996.

Health Statuses

While it is relatively easy to define death, it is much more difficult to define good health or the absence of activity limitations and dependence within a population. The vast majority of studies conducted to date have used the questions on activity limitation and dependence in order to define two or sometimes three health states.

---

[4] However, a brief description of the multiple increment-decrement tables method is available in the *1995 Report on the Demographic Situation* (Dumas and Bélanger, 1995).

[5] Sponsored by the Chief Statistician of Canada, the National Health Information Council and the Conference of Deputy Ministers of Health, this task force had issued the recommendation that "the health information system should include an overall aggregate index of population health—some sort of GDP [Gross Domestic Product] or CPI [Consumer Price Index] of health, which would be the culmination or aggregation of a coherent family of health status indicators" (Wilk, 1991).

Table 2. Health Status Definition

Level	Health Status	Definition
1	Dependence-free	No dependency OR needs help only for heavy housework;
2	Moderately dependent	Needs help for meal preparation OR for shopping for groceries or other necessities OR for everyday housework;
3	Severely dependent	Needs help for personal care OR for moving around the house;
4	Institutionalized	Living in a health institution

In this article, the definition of health states had to satisfy an additional condition, namely that it be the same for three different surveys. While a subset of questions on activity limitation were identical, this was not the case with the questions designed to measure dependence. In the two HALS surveys, for example, respondents were asked who usually prepared their meals. If the respondent stated that another person prepared his or her meals, an additional question was asked in order to determine whether this situation was due to a long-term health problem. Therefore the concept involved was one of *assistance received*. In the NPHS, the equivalent question instead dealt with the concept of the *need for assistance*, since respondents were asked whether they needed another person to help them accomplish a given task because of a long-term health problem. While similar, the concepts are not identical; for example, it may be that the need for assistance is generally greater than the assistance actually received.

Despite this difference, for which there is no perfect solution, we used the questions on dependence to define four health statuses, drawing on earlier studies of Wilkins (1991, 1993) (see Table 2).

These health states are of particular interest in that for levels 2, 3 and 4, they imply a daily dimension and variable costs for the health care system in Canada. For example, it seems likely that an individual at level two can easily be looked after by his or her informal support network.[6] However, where no such network exists, it will be necessary to call upon the formal home

[6] An individual's informal support network consists of the immediate family (spouse and children) and extended family (brothers and sisters, uncles and aunts, cousins, etc.) as well as friends and neighbours.

support structures set up by the government. For an individual at level three, it seems hard to imagine doing without the health care and health services system even if he or she has an excellent informal support network. The persons in that network will eventually need a respite, since the dependence is not only daily but also very onerous. Lastly, level four represents sizable costs for the health care system, even if some institutions are private.

Surveys Used

Three surveys representative of the population were used in this study: the Health and Activity Limitation Surveys (HALS) of 1986 and 1991 and the National Population Health Survey (NPHS) of 1996. In each survey, only the population 15 years of age and over was selected.

The HALS surveys are postcensal surveys, conducted after the 1986 and 1991 censuses. The goal of those surveys was to gather information on the activity limitation and dependence of the Canadian population as a whole. The target population of the surveys consisted of individuals residing in either private households or health care institutions.[7] The size of the samples in 1986 and 1991 was respectively 184,500 and 148,850 respondents.

Initiated in 1994, the NPHS is both a cross-sectional and a longitudinal survey designed to collect information on the health of the Canadian population every two years. This survey has three parts, the first concerning individuals living in private households in Canada. The second concerns residents of long-term health care institutions, and the third concerns the population living in the North (residents of the Territories and aboriginal populations of remote areas of provinces). The 1996 sample consisted of 81,804 respondents, or just over half as many as in the HALS surveys, making estimates more fragile.

However, the population living in health care institutions (level 4) was estimated from the censuses. This choice was motivated by the prospect of obtaining much more accurate estimates—based on the entire population—than those based on relatively small samples for estimating a phenomenon that is generally rather uncommon, at least under age 75.

Results

This section first presents the prevalence of each health status by age and sex, estimated by means of the surveys (for health statuses 1, 2 and 3) and censuses (for health status 4). Second, a measure of dependence-free life expectancy in 1986, 1991 and 1996 is calculated and discussed. The section ends with a discussion of health-adjusted life expectancy.

---

[7] Individuals living in penitentiaries and campgrounds were excluded from the sample, as were members of the Canadian Armed Forces.

Prevalences in 1986, 1991 and 1996

Figure 2 provides a comparison by age and sex of the prevalence of each health state over ten years in Canada. For each age, the sum of the prevalences of the four health states, a value found on each of the curves for the same sex, is equal to one. The curves for the first three health states exhibit slight random variations due to sampling errors, which are unavoidable when using survey data.

Before age 65, the vast majority (at least 90%) of the Canadian population lives dependence-free (Figure 2). When there are dependencies before that age, Figure 2 shows that they are mostly moderate, with very few individuals classified in levels 3 or 4. In general, very few differences emerge from one year of observation to another, suggesting that in Canada, morbidity prior to age 65 has already reached a threshold beyond which further compression will be difficult. However, the sexes have different morbidity profiles: at each age between 15 and 64, the proportion of females coping with moderate dependence is nearly two times greater than the corresponding proportion of males.

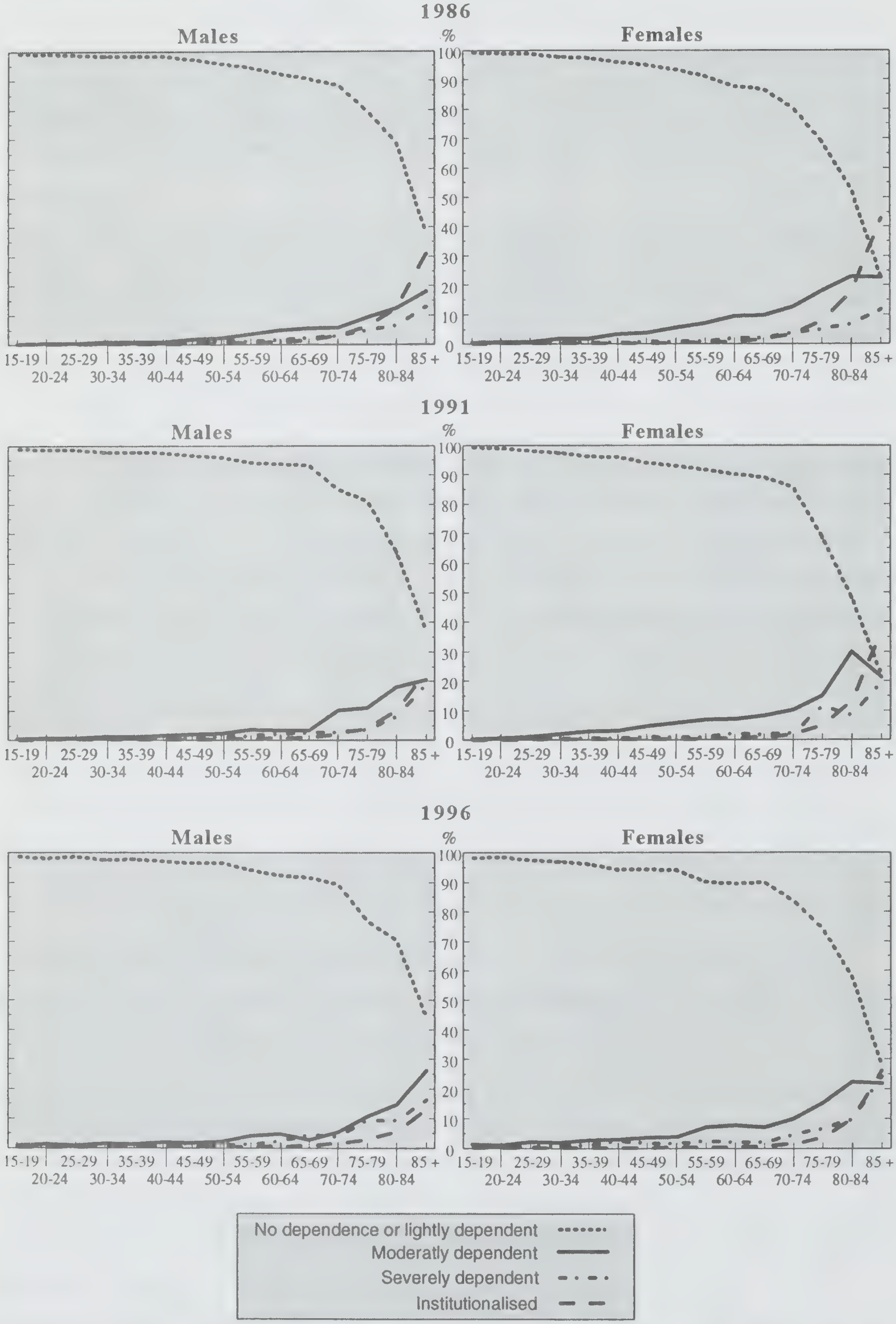
But starting at age 65, the overall health status of the population rapidly deteriorates. Thus, with advancing age, progressively fewer individuals report having no major dependence. While the prevalence of level 2 (moderate dependence) begins to increase prior to age 65, the prevalence of severe dependence (level 3) begins increasing for both sexes primarily around age 70, whereas the prevalence of institutionalization does not really begin to increase until age 75. Women, more than men, experience severe dependence and institutionalization: beyond age 85, there are more women in health care institutions than in private households, which is never the case with men. This phenomenon may be explained not only by women's greater life expectancy but also by their different marital status in old age; because of excess male mortality, many women are widows during their older years.

Solely on the basis of prevalences after age 65, it is difficult to conclude that the health of the Canadian population actually improved or deteriorated between 1986 and 1996. It may be that the clearly downward trend in the numbers living in health care institutions is more the result of changes to health care policies over the past ten years, basically oriented toward de-institutionalization, than the consequence of a general improvement in the health of the population.

Dependence-Free Life Expectancy (DFLE) at Age 15 and 65

Like total life expectancy, DFLE at age 15 steadily increased in absolute terms from 1986 to 1991 to 1996 (Table 3 and figure 3). Thus, Canadian males could expect to live 55.6 years dependence-free in 1986, 56.3 years in 1991 and 57.0 years in 1996. Females, for their part, saw their dependence-

Figure 2. Prevalence of Health Statuses by Age and Sex, Canada, 1986, 1991 et 1996



Sources: 1986 and 1991: Health and Activity Limitations Survey (HALS); 1996: National Population Health Survey (NPHS) and Demography Division, Research and Analysis Section.

free life expectancy rise from 57.8 years in 1986 to 58.4 years in 1991 and 58.9 years in 1996. However, in relative terms, those 58.9 years represent only 88% of their total life expectancy, whereas males can expect to spend 93% of their life without dependence. Thus, sizable differences exist between the sexes, with females spending a larger portion of their life than males in a state of moderate or severe dependence or even in a health care institution (approximately 4 years more in each year of observation). Furthermore, the gaps that exist between males' and females' life expectancy at age 15 are not reflected in equally large gaps in DFLE; the gaps for the latter indicator are much smaller (for example, only 1.9 years separates the DFLE of males and females in 1996, compared to a life expectancy (LE) gap of 5.7 years).

In the past decade, the bulk of Canadians' gains against mortality have been reflected in an increase in dependence-free life expectancy. Males' life expectancy increased by 1.8 years, three-fourths of which (1.4 years) was in years of life without dependence. For females, while it is true that their life expectancy grew less rapidly over this period (with a gain of 1 year), it is remarkable that all of this gain, and even a little more, was in years of life without dependence. Beyond question, from the individual's perspective, such progress is desirable. Canadians of both sexes can expect not only to live longer, but also to live longer in good health!

However, the number of years lived with dependence also increased, in particular during the 1986-1991 period. The proportion of total life expectancy that a male or female can expect to live in without dependence slightly declined between 1986 and 1991, suggesting that of the years of life gained during that period, a greater proportion were years lived with some form of dependence than years lived dependence-free. While there were therefore absolute gains in terms of dependence-free years of life during that period, the increase in the number of years lived with dependence was slightly more rapid. During that period, there was therefore both an absolute and a relative expansion of morbidity, although it was greater among males than among females, and an absolute expansion of years lived without dependence.

The period 1991-1996 appears to be more favourable, since total life expectancy continued to rise, albeit less rapidly than in the first five-year period, but this increase was entirely due to gains in dependence-free years. The number of years lived with dependence even decreased slightly for females and remained unchanged for males. The proportion of total life expectancy lived dependence-free remained the same (93.2%) in 1991 and 1996 for males and for females, it rose from 87.6% to 88.1%. This period was therefore characterized by a slight absolute and relative compression of morbidity for females.

Table 3 also shows LE and DFLE at age 65. As may be seen, the life expectancy of males aged 65 and over increased by 0.8 years between 1986 and 1991. Those gains are divided equally between years lived with dependence

Table 3. Life Expectancy (e) and Dependence-Free Life Expectancy (DFLE) at Age 15 and 65 by Sex, Canada, 1986, 1991 and 1996

	Males			Females		
	e	DFLE	Difference	e	DFLE	Difference
Age 15	In Years					
1986	59.3	55.6	3.7	65.8	57.8	8.0
1991	60.4	56.3	4.1	66.6	58.4	8.2
1996	61.1	57.0	4.1	66.8	58.9	7.9
	Percentage[1]					
1986	100.0	93.8	6.2	100.0	87.8	12.2
1991	100.0	93.2	6.8	100.0	87.6	12.4
1996	100.0	93.2	6.8	100.0	88.1	11.9
Age 65	In Years					
1986	15.0	12.0	3.0	19.4	12.7	6.7
1991	15.8	12.4	3.4	20.0	13.2	6.8
1996	16.1	12.9	3.2	20.0	13.8	6.2
	Percentage[1]					
1986	100.0	80.0	20.0	100.0	65.8	34.2
1991	100.0	78.7	21.3	100.0	66.0	34.0
1996	100.0	79.9	20.1	100.0	69.3	30.7

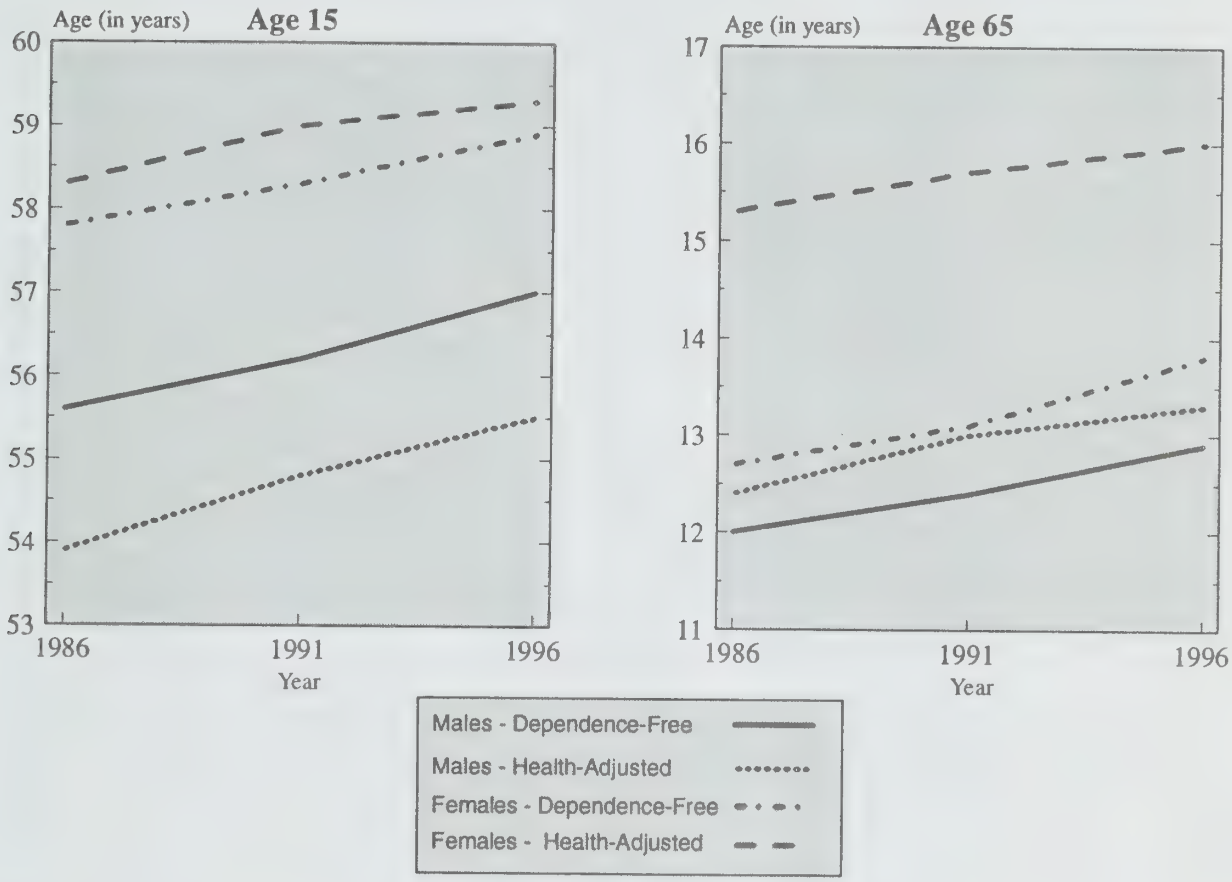
[1] Percentages were obtained using unrounded data.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Research and Analysis Section.

and dependence-free years. However, since the number of years lived with dependence is smaller than the number of years lived dependence-free (3.0 vs 12.0), an absolute increase of the same size can only result in a greater relative increase for life expectancy with dependence. This is why the proportion of total life expectancy lived with dependence slightly increases from 20.0% to 21.3%. For females, the number of years of life lived dependence-free also increased, but at a slower rate as total life expectancy, causing the proportion of the years of life lived with dependence to slightly decrease (34.2% in 1986 and 34.0% in 1991). In relative terms, there was a slight compression of morbidity among elderly women in the period 1986-1991.

As Table 3 shows, a compression of morbidity after age 65 is evident in the next five-year period. Elderly women in particular appear to have reduced

Figure 3. Dependence-Free Life Expectancy and Health-Adjusted Life Expectancy at Age 15 and 65, by Sex, Canada, 1986, 1991 and 1996



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Research and Analysis Section.

the burden of years spent with dependence, since the proportion represented by those years falls from 34.0% to 30.7% between 1991 and 1996. Since life expectancy at age 65 did not change over this period, all the gains were made against morbidity. On the other hand, men made gains with respect to both mortality (0.3 years) and morbidity (0.5 years). Since the latter gains are larger, men could expect, in 1996, to spend a smaller proportion of their years living with dependence (21.3% in 1991 vs 20.1% in 1996).

In short, it may be concluded that the compression of morbidity in the period 1991-1996 was greater for females than for males. On the other hand, total life expectancy at age 15 and at age 65 grew more rapidly among males during those years. These facts suggest that the gains yet to be made against mortality could be increasingly difficult to realise for females, but that there would still be room for them to make gains against morbidity. For males, life expectancy being lower, it could be easier to realise gains with respect to both mortality and morbidity. The sizable difference that continues to exist

Differences in Life Expectancy Between the Sexes

Less sizable at the start of the century (3 years in 1901), a sizable imbalance between the life expectancy of males and females exists today (5.8 years in 1996: Table 1). The combined effect of a reduction in mortality associated with childbearing and lifestyle differences between the sexes (basically related to risk taking behaviour including smoking, drinking and driving) largely explains the widening of this gap between 1901 and 1981, for all ages. It is nevertheless especially sizable, in relative terms, beyond age 65. Thus, women aged 65 and over can expect to outlive men of the same age by four years, or 25%!

Having thus peaked in the mid 1970s (the gap between males' and females' life expectancy at birth was then 7.3 years), this imbalance has been gradually decreasing ever since, for all ages except after 80, when it is fairly stable. The explanation for this narrowing of the gap probably lies in women's growing tendencies to adopt a lifestyle that puts their health more at risk, in terms of stress and alcohol and tobacco consumption. For this reason, it is likely that the trend that began two decades ago will continue through the first half of the next century.

between the sexes as to the proportion of years lived with dependence also suggests that old age is lived quite differently by the two sexes (Box "Differences in Life Expectancy Between the Sexes").

The analysis of DFLE indicates that the greatest part of the expansion of morbidity during the first period and the compression of morbidity during the following period results from the change in life expectancies (LE and DFLE) after age 65.

As noted above, it is possible that these results reflect in part the changes made to Canadian health programs in the period 1986-1996. Most provinces undertook stricter control of spending in the health sector and implemented programs designed to maintain personal autonomy, increase the involvement of the informal support network and postpone institutionalization as much as possible.

In Canada, the elderly population living in health care institutions is largely female: beyond 80 years of age, there were almost three women for every man in such institutions. An analysis of sex ratios[8] in 1991 and 1996 shows

[8] As defined as the number of females divided by the number of males in health care institutions.

that the proportion of female residents in health care institutions has been further increasing. It is possible that current health policies, oriented toward home support and de-institutionalization, have a greater impact on the male population than on the female population. Furthermore, it is possible that, when the population is aging, a stabilization or reduction in the number of beds in health care institutions can only serve to heighten the average age of the resident population. And since there is a direct relationship between age and the sex ratio, de-institutionalization policies could be accompanied by an increase in the relative number of women living in health care institutions.

In addition, women are more often institutionalized than men in old age because they are less likely to be able to count on the presence of a spouse in the event of health problems resulting in severe limitations.[9] A certain proportion of elderly or very elderly males living in health care institutions reside there not because of severe dependence but rather because of their inability to cope with domestic chores (meal preparation, shopping, etc.) following the death of their spouse (Trottier et al. 1999). The provision of such services in the home now enables such men to stay there more easily. Elderly or very elderly women, on the other hand, are more independent with respect to these aspects of domestic life, and they therefore go into an institution for reasons more often linked to major limitations or physical dependence than is the case with men.

This hypothesis is to some extent supported by the experience of other industrialized countries such as Finland. That country has a much lower proportion of elderly individuals living in health care institutions than Canada (one-half less at all ages) but also a much higher proportion of women in institution relative to men at all ages (Légaré and Martel, 1999), suggesting that women, more than men, require such services for health reasons alone.

Health-Adjusted Life Expectancy at Ages 15 and 65

HALE is probably a more realistic means of measuring the overall health status of a population, since it is a more complete measure. It assigns an average score—calculated by age and sex—to the years lived in each health status so as ultimately to obtain only a single value per sex. HALE represents the equivalent number of years in perfect health that an individual can expect to live during his or her life cycle if exposed to the mortality and morbidity conditions that prevail today at each age.

There are various ways to determine an average score for each health status. Some authors in the past have relied solely on their judgment (Wilkins, 1991). While this approach can yield good results, it is preferable to use a

---

[9] Because of excess male mortality and their tendency to marry men older than themselves.

Table 4. Life Expectancy (e) and Health-Adjusted Life Expectancy (HALE) at Age 15 and 65 by Sex, Canada, 1986, 1991 and 1996

	Males			Females		
	e	HALE	Difference	e	HALE	Difference
Age 15	In Years					
1986	59.3	53.9	5.4	65.8	58.3	7.5
1991	60.4	54.8	5.6	66.6	59.0	7.6
1996	61.1	55.5	5.6	66.8	59.3	7.5
	Percentage[1]					
1986	100.0	91.0	9.0	100.0	88.6	11.4
1991	100.0	90.8	9.2	100.0	88.5	11.5
1996	100.0	90.7	9.2	100.0	88.7	11.3
Age 65	In Years					
1986	15.0	12.4	2.6	19.4	15.3	4.1
1991	15.8	13.0	2.8	20.0	15.7	4.3
1996	16.1	13.3	2.8	20.0	16.0	4.0
	Percentage[1]					
1986	100.0	82.6	17.4	100.0	78.9	21.1
1991	100.0	82.5	17.5	100.0	78.8	21.2
1996	100.0	82.9	17.1	100.0	80.0	20.0

[1] Percentages were obtained using unrounded data.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Research and Analysis Section.

more objective measure of health status. Such a measure exists in Canada, developed by McMaster University: the Health Utility Index (HUI; see Box "The Health Utility Index"). This index is now available as a derived variable within the NPHS. Unfortunately, the questions necessary for calculating the HUI are not included in the 1986 and 1991 HALS questionnaires, so it cannot be calculated for those two years. For this reason, the HUI values obtained using the 1996 NPHS were used as weighting factors for the years lived in each health states in 1986 and 1991.

Table 4 shows that HALE at age 15 and at age 65 increased from one period to the other for both sexes. There were therefore absolute gains for both sexes. What instead attracts our attention in Table 4 is the small difference between the sexes in the proportions of years lived in perfect health (91.0%

The Health Utility Index

Developed by McMaster University's Centre for Health Economics and Policy Analysis (CHEPA), the Health Utility Index (HUI) summarizes both the quantitative and qualitative aspects of an individual's health. It has two components: the first is a classification of a person's functional health states, based on eight attributes: vision, hearing, speech, mobility, dexterity, cognitive ability, pain and discomfort. The second component is a mapping designed to take account of the preferences of the population concerning statuses of health. These two components are combined into a single index that accordingly summarizes health. The index varies between one, for perfect health, and zero, for death. For instance, an individual with near-sightedness but no other health problem would be assigned a score of 0.95.

for males in 1986 vs 88.6% for females the same year). Table 3, by contrast, showed major differences between males and females. In fact, at age 15, the HALE indicator is consistently greater than DFLE for women and smaller for males. The explanation of this phenomenon has to do with the fact that the prevalence of dependence is lower for males, implying that a value of one was assigned to a sizable number of males in calculating DFLE.[10] By contrast, since the prevalence of dependence is greater among females, a weight other than zero was assigned to a greater number of years lived with dependence when calculating HALE for females.

At age 65, however, HALE consistently exceeds DFLE for both sexes. Since a major portion of old age is still lived with dependence, the weight assigned to these years remains sizable in calculating HALE, whereas it is zero for DFLE. Herein lies all the value of HALE, which takes account, by an objective measure (HUI), of the actual health status of a specific population, such as the population that reports having severe dependence.

Conclusion

The purpose of this article was to present dependence-free and health-adjusted life expectancies at three different dates to determine whether the years added to life resulting from the increase in total life expectancy are years lived in good health or, on the contrary, these gains are only increasing the number of years lived in dependency. The results of this study shed an

[10] Implicitly, DFLE assigns a score of one to all years lived disability-free and zero for years lived with disability. The HALE assigns scores between 0 and 1, even for years lived with no dependency.

optimist light on this question: Canadians of both sexes can currently expect to live longer than ever dependence-free and in good health. These findings apply to both the younger and older population.

In addition, in the context of an aging Canadian population and controlled public spending on health, it appeared important to examine the theories of an "*expansion of morbidity*" or a "*compression of morbidity*" in light of Canadian data. The results obtained using the Sullivan method, with three observations over a span of ten years, suggest that over the studied period, the gains made against mortality are distributed, in relative terms, about equally between years lived with and without dependency.

The results obtained in this study are all consistent with the findings of other studies conducted in Canada (Wilkins et Adams, 1992; Berthelot, Roberge, Cranswick, 1999). Furthermore, these results appear to point in the same direction as those described by Crimmins, Saito and Ingegneri (1997) for the United States. There is every indication that for our neighbours to the South too, the decade now ending was also characterized by a compression of morbidity, although it was a modest one. However, the trend had started during the 1980s, which is not the case in Canada, probably because more rapid progress in extending Canadian life expectancy was observed in that decade.

However, these findings run counter to those published in a recent report of the OECD (1998). According to the OECD findings, disability-free life expectancy in Canada decreased in absolute terms between 1978 and 1991, unlike in other member countries such as Japan, Germany, the United States and the United Kingdom. The unfavourable results obtained by the OECD are due to the fact that the concepts used to measure dependence differed from one period to another. In the present study, health statuses were defined in the same way over the entire study period, thus avoiding biases of this type.

These results are, nevertheless, presented with some methodological and theoretical caveats. The perception of health probably evolves over time: a population which is increasingly educated and informed, in which health care and health services are increasingly known, accessible and utilized, can be expected to have a tendency to perceive its health status differently. Problems that were seen as benign or unimportant ten years ago may today be more accurately identified by surveys on the subject. It is therefore not out of the question that a greater reduction in morbidity within the population is masked by differential reporting by individuals of their health status. In addition, it should be noted that the 1986 and 1991 surveys were health and activity limitation surveys, whereas the 1996 survey was a population health survey. It is possible that answers given by respondents to the same question differ when asked in a different context. In the present study, however, the results

are unlikely to be affected by this phenomenon, since the definition of health statuses are based on the concept of dependence, which is much less subject to such variations over time because it is more objective.

Finally it is possible, as this article has shown, for life expectancy to grow faster than dependence-free life expectancy. If the compression of morbidity is becoming an objective of public health policies, it would seem important at this point to continue or indeed step up efforts to combat chronic diseases. Hence a population in good health rests not only on efforts to combat fatal diseases, which are prevalent at all ages, but also—and may be more importantly—on efforts to combat chronic or degenerative diseases, which are still quite common beyond age 65.

BIBLIOGRAPHY

Bélanger, A., Berthelot, J.-M. and L. Martel (1999). The Canadian National Population Health Survey and the Calculation of Canadian Healthy Life Expectancy Indicators for the Next Decade. Presented at the 11th REVES International Meeting Proceedings. London.

Berthelot, J.-M., Roberge, R. and K. Cranswick (1999). Linking Disability-Adjusted Life Expectancy with Health-Adjusted Life Expectancy : Calculations for Canada. In 9th REVES International Meeting Proceedings. ***Towards an Integrated System of Indicators to Assess the Health Status of the Population***. ISTAT. N° 4. Pages 27-53.

Berthelot, J.-M., Roberge, R. and M.C. Wolfson (1993). The Calculation of Health-Adjusted Life Expectancy for a Canadian Province Using a Multi-Attribute Utility Function : A First Attempt. In J.-M. Robine, C.D. Mathers, M.R. Bone and I. Romieu (eds.). ***Calculation of Health Expectancies : Harmonization, Consensus Achieved and Future Perspectives***. Montpellier, France : Colloque INSERM / John Libbey Eurotext Ltd. Pages 161-172.

Crimmins, E.M. (1990). Are Americans Healthier as Well as Longer-Lived? ***Journal of Insurance Medecine***. 22 (2): 89-92.

Crimmins, E.M., Saito, Y. and D. Ingegneri (1997). Trends in Disability-Free Life Expectancy in the United States, 1970-90. ***Population and Development Review***. 23 (3): 555-572.

Dumas, J. and A. Bélanger (1995). ***Report on the Demographic Situation in Canada 1995***. Current Demographic Analysis. Statistics Canada. Catalogue no. 91-209E. Pages 62-63.

Fries, J.F. (1980). Aging, Natural Death, and the Compression of Morbidity. ***New England Journal of Medicine***. 303 (3): 130-135.

Fries, J.F. (1983). The Compression of Morbidity. ***Milbank Memorial Fund Quarterly / Health and Society***. 61 (3): 397-419.

Fries, J.F. (1989). The Compression of Morbidity : Near or Far? ***Milbank Quarterly***. 67 (2): 208-232.

Légaré, J. and L. Martel (1999). ***Living Arrangements of Older Persons***. Research paper presented at the Conference on Status of the Older Population : Prelude to the 21th Century, Sion (Switzerland). Population Activities Unit (UN-ECE). December 1999.

Manton, K.G., Stallard, E. and H.D. Tolley (1991). Limits to Human Life Expectancy : Evidence, Prospects and Implications. ***Population and Development Review***. 17 (4): 603-637.

Nusselder, W. (1998). A Multistate Life-Table Analysis of Health Expectancy Using Pooled Data from Different Longitudinal Studies. In Nusselder, W. ***Compression or Expansion of Morbidity – A Life-Table Approach***. Amsterdam. Thesis Publishers. Pages 85-128.

OCDE (1998). ***OECD Health Data 98***. Paris. OECD.

Olshansky, S.J., Carnes, B.A. and C. Cassel (1990). In Search of Methuselah : Estimating the Upper Limits to Human Longevity. ***Science.*** 250: 634-640.

Olshansky, S.J., Rudberg, M.A., Carnes, B.A., Cassel, C.K. and J.A. Brody (1991). Trading Off Longer Life for Worsening Health. ***Journal of Aging and Health***. 3 (2): 194-216.

Olshansky, S.J. and B.A. Carnes (1994). Demographic Perspectives on Human Senescence. ***Population and Development Review***. 20 (1): 57-80.

World Health Organization (1997). ***The World Health Report 1997 : Conquering, Suffering, Enriching Humanity***. Rapport au directeur général. Geneva.

Rogers, R.G., Rogers, A. and A. Bélanger (1989). Active Life Among the Elderly in the United States : Multistate Life-Table Estimates and Population Projections. ***The Milbank Quarterly***. 67 (3-4): 370-411.

Rogers, R.G., Bélanger, A. and A. Rogers (1991). Espérance de vie autonome, en perte d'autonomie et en institution parmi la population âgée . ***Cahiers Québécois de Démographie***. 20 (2): 269-289.

Sanders, B.S. (1964). Measuring Community Health Levels. ***American Journal of Public Health***. 54. Pages 1063-1070. Sullivan, D.F. (1971). A Single Index of Mortality and Morbidity. ***HSMHA, Health Reports***. 86: 347-354.

Trottier, H., Martel, L., Houle, C., Berthelot, J.-M. and J. Légaré (1999). Les facteurs de risque associés à la présence en institution pour les personnes âgées faisant face à des incapacités au Canada. ***Rapports sur la santé***. Statistics Canada. Catalogue no. 89-003 (in press).

Verbrugge, L.M. (1984). Longer Life but Worsening Health? Trends in Health and Mortality of Middle-Aged and Older Persons. ***Milbank Memorial Fund Quarterly / Health and Society***. 62 (3): 475-519.

Wilk, M. B. (1991). ***Report of the National Task Force on Health Information***. Ottawa. National Health Information Council.

Wilkins, R. and O. Adams (1983). Health Expectancy in Canada, late 1970's : Demographic, Regional and Social Dimensions. ***American Journal of Public Health***. 73: 1073-1080.

Wilkins, R. (1991). Espérance de vie en santé au Québec et au Canada en 1986. *Cahiers Québécois de Démographie*. Volume 20: (2) 367-382.

Wilkins, R. and O. Adams (1992). Les tendances de l'espérance de vie en santé au Canada, 1951-1986. In Robine, J.-M., Blanchet, M. and J.E. Dowd (eds). ***Espérances de santé***. Paris. Éditions INSERM. Collection Analyse et Prospective.

Wilkins, R. (1993). Health Expectancy : The Canadian Experience. Towards the Year 2000 : Refining the Measures. ***Proceedings of the 1993 Public Health Conference on Records and Statistics***. DHHS Publication no. (PHS) 92-1214. Washington DC : National Center for Health Statistics. Pages 161-166.

Wilkins, R., J. Chen and E. Ng (1994). Changes in Health Expectancy in Canada from 1986 to 1991. In C. Mathers, J. McCallum and J.-M. Robine (eds.). ***Advances in Health Expectancies***. Australian Institute of Health and Welfare.

Wolfson, M.C. (1989). POHEM – Une approche inédite pour l'estimation de l'espérance de vie corrigée en fonction de l'état de santé. Presented at the 1st REVES International Meeting Proceedings. Quebec.

Wolfson, M.C. (1996). Health-Adjusted Life Expectancy. ***Health Reports***. 8 (1): 41-46.

ETHNIC MOBILITY AND THE DEMOGRAPHIC GROWTH OF CANADA'S ABORIGINAL POPULATIONS FROM 1986 TO 1996

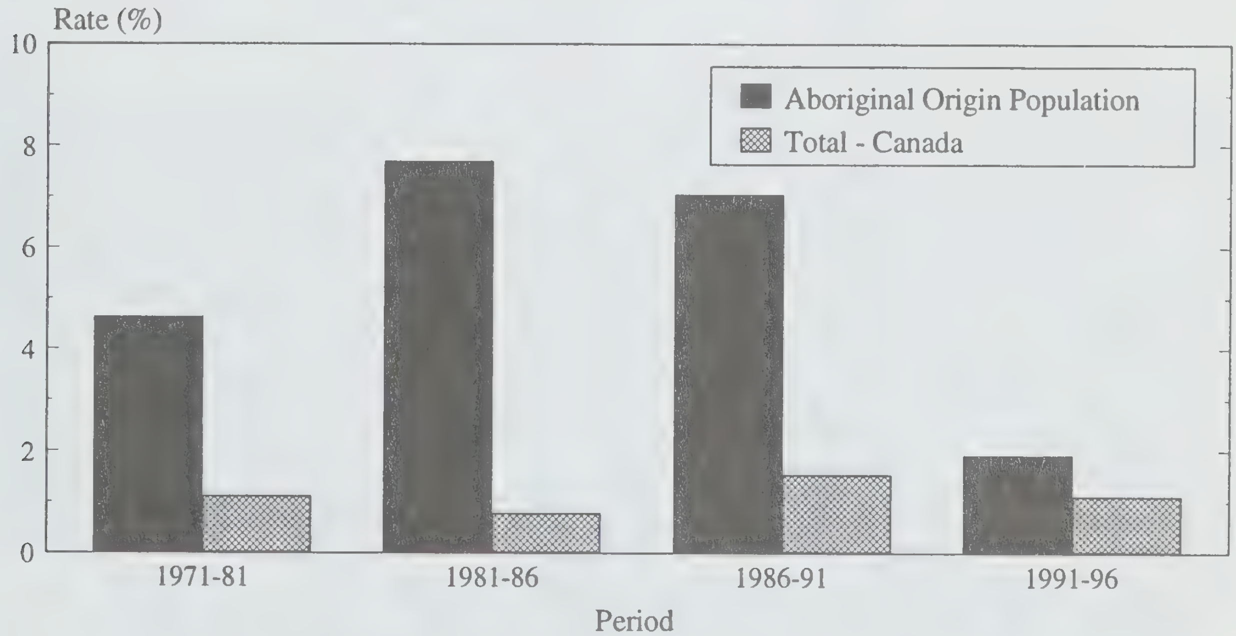
by Éric Guimond[1]

Introduction

As the century draws to a close, there are many topics of interest involving Canada's aboriginal peoples: self-government, land claims, the environment, the criminal justice system, urbanization, the labour market, education, etc. However, one topic receives little attention but could have a major impact on how the others will develop: the demographic growth of aboriginal populations.

From 1971 to 1996, populations of aboriginal origin as enumerated in the census more than tripled in size (+252%), increasing from 312,800 to 1,102,000 persons. By comparison, the total increase in the Canadian population as a whole was 30% during the same period. To triple in twenty-five years, a population must experience phenomenal annual growth rates. Among Aboriginal populations, growth rates in excess of 7% were observed during the periods 1981-1986 and 1986-1991 (Figure 1). These increases greatly exceed the

Figure 1. Comparison of the Average Annual Growth Rates of the Aboriginal and Total Population, Canada, 1971-1996



Sources: Statistics Canada, Censuses of Canada, 1971 to 1996.

[1] The author wishes to thank Norbert Robitaille of the Université de Montréal under whom he his writing a dissertation, and Alain Bélanger, Andrew J. Siggner and Gustave G. Goldmann of Statistics Canada for their relevant and generous comments.

> **Theoretical Maximum for Natural Increase**
>
> Theoretically, the maximum rate of natural increase is 5.5% per year. It is obtained from the highest crude birth rate (60 per 1,000 persons) observable in exceptional conditions —a young population, marrying young and practising no form of contraception— from which is subtracted the lowest crude death rate (5 per 1,000 persons) (Pressat, 1979). Such a combination of a high birth rate and a low death rate has probably never been observed. Today, the highest national rates of natural increase in the world are approximately 3.5% per year. A population maintaining a growth rate of 5.5% per year doubles every 13 years. After a hundred years, that population would be more than 200 times larger than at the outset. A growth rate in excess of 5.5% cannot be explained by natural increase alone: phenomena other than births and deaths are contributing to the increase.

maximum of 5.5% per year that is theoretically possible for a population that is subject only to the natural movement of births and deaths. In practice, this is the case for populations reporting aboriginal origin at the national level.[2] They also contrast sharply with the increase observed during the last five-year period.

A longitudinal analysis of the growth of Aboriginal populations over the periods 1981-1986 and 1986-1991 reveals increases that cannot be explained solely by the interaction of natural increase and migration. For a population

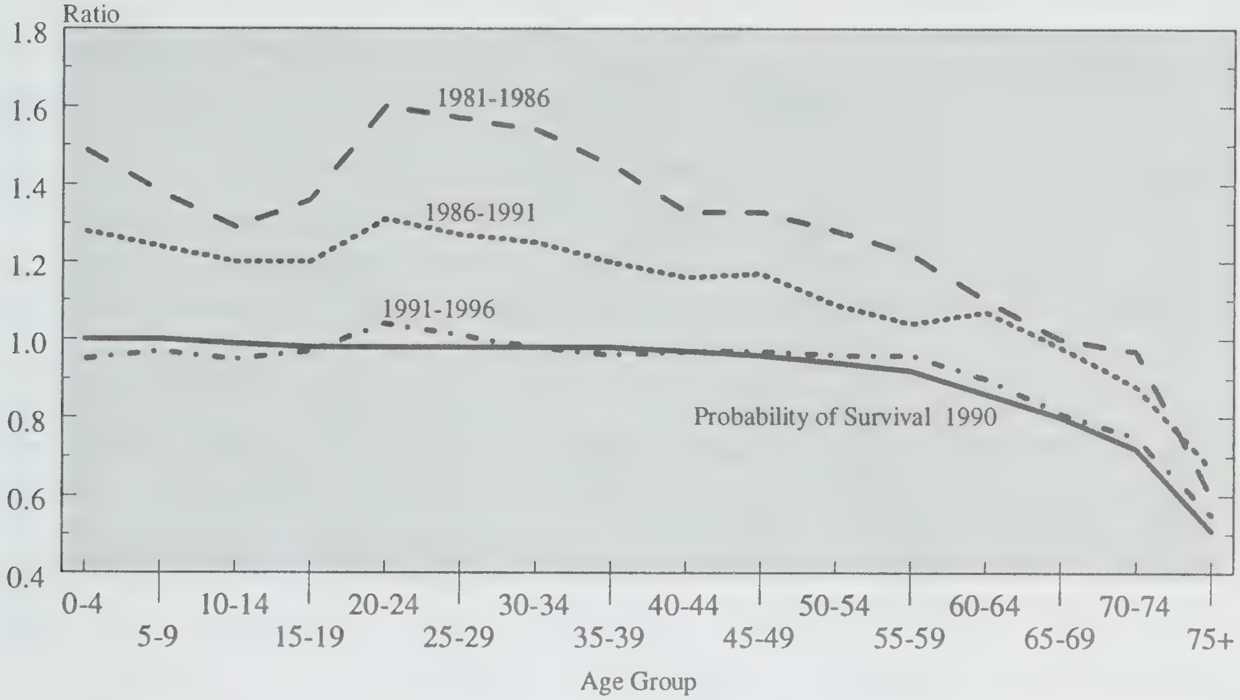
> **Aboriginal Identity of Populations of Aboriginal Origin**
>
> The information available allows us to distinguish populations of aboriginal origin according to aboriginal identity, a concept introduced in 1986[3] in order to improve the enumeration of aboriginal populations (Statistics Canada, 1989). The concept of origin refers to the ethnic or cultural group to which one's ancestors belonged, while the concept of identity designates the respondent's current identification or sense of belonging. The question on aboriginal identity in the 1996 Census contains four response choices: Indian, Métis, Inuit and non-Aboriginal.

---

[2] In practical terms, the contribution of international migration may be considered nil. In the 1996 Census, 4,900 persons of aboriginal origin indicated that they were living outside Canada 5 years earlier.

[3] The 1986 Census data on aboriginal identity have never been the subject of an official release, partly because of reporting errors detected within the non-aboriginal population. This analysis focuses solely on the identity of populations of aboriginal origin, for which the data on identity are reliable. Those data are available on special request.

Figure 2. Ratio of Aboriginal Origin Cohorts, Canada, 1981-1986, 1986-1991 and 1991-1996



Sources: Statistics Canada, Censuses of Canada for 1981, 1986, 1991 and 1996, and Demography Division, unpublished data.

practically closed to migration, the ratio between the size of a cohort at time t+n (for example, the 1965 cohort today) and the size of that same cohort at time t (the 1965 cohort at its beginnings) must be less than 1, with the complement on one being made up of the members of the cohort who died. Yet, for a majority of the aboriginal cohorts, exactly the opposite occurs in the periods 1981-1986 and 1986-1991 (Figure 2). The ratio of the cohort sizes is greater than 1 for all age groups under 65 years of age, which means that the number of persons who were born in a given year is not decreasing but is actually increasing! The cohorts of adults under age 35 in 1981 increased by more than 50% during the period 1981-1986. Clearly, phenomena other than fertility and mortality are at work here. But what are they? The answer to this question may be found in data from the 1986, 1991 and 1996 censuses of Canada and the 1991 Aboriginal Peoples Survey (APS).

A) Growth of Canada's aboriginal populations from 1986 to 1996

From 1986 to 1996, populations of aboriginal origin as enumerated in the census went from 711,700 to 1,102,000, with the bulk of the increase[4] occurring in the first five-year period (Table 1). This increase varied considerably

[4] Some aboriginal communities wholly or partially refuse to participate in enumeration activities. From one census to the next, the list of those communities varies, giving rise to a serious problem of data comparability. The rates of increase shown here are calculated for populations that participated in the censuses.

Table 1. Number and Growth Rate for Aboriginal Origin Population According to the Aboriginal Identity, Canada, 1986-1996

Aboriginal Origin Aboriginal Identity	1986		1991		1996		Average Annual Growth Rate[1] (%)	
	Number	%	Number	%	Number	%	1986-91	1991-96
Aboriginal Origin	711,720	100.0	973,710	100.0	1,101,960	100.0	7.0	1.9
Aboriginal Identity	464,455	65.3	613,820	63.0	718,950	65.2	6.6	2.3
North American Indian	329,730	46.3	443,285	45.5	494,830	44.9	7.1	0.9
Métis	103,085	14.5	128,700	13.2	178,525	16.2	5.1	6.7
Inuit	30,105	4.2	35,495	3.6	39,705	3.6	3.4	2.3
Multiple Aboriginal	1,540	0.2	6,340	0.7	5,880	0.5	33.4	-1.5
Non Aboriginal Identity	247,265	34.7	359,890	37.0	383,005	34.8	7.8	1.2

[1] Adjusted Rates for partially enumerated aboriginal communities and for the inclusion of non-permanent residents since 1991.

Sources: Statistics Canada, Censuses of Canada from 1986 to 1996 and the 1991 Aboriginal Peoples Survey.

depending on the identity reported. First, the North American Indian population, which accounts for nearly two-thirds of the whole, rose from 329,700 persons to 494,800 persons from 1986 to 1996. More than for any other aboriginal group, the explosive growth of the population during the first five-year period (7.1%) contrasts with the low growth in the second period (0.9%). Remarkably, the last census shows a lower growth rate for this aboriginal group than for the Canadian population as a whole! The number of Métis rose from 103,100 persons in 1986 to 178,500 persons in 1996. At 5.1%, the annual growth rate of the Métis population from 1986 to 1991 was already near the theoretical maximum for natural increase of 5.5% per year, but from 1991 to 1996 it was even higher (6.7%). Among the Inuit, the numbers climbed from 30,100 to 39,700 persons, with faster growth in the first five-year period (3.4%). This was the only aboriginal group to grow at a rate below the theoretical maximum for natural increase in both periods. Few people report more than one aboriginal identity, and this largely accounts for the unbelievably high growth rate in the period 1986-1991. Lastly, the population of aboriginal origin reporting no aboriginal identity, which constitutes the second largest group of individuals of aboriginal origin, grew in ten years from 247,300 to 383,000. As in the case of the North American Indian population, the growth of this group was very high in the first five-year period (7.8%) but much more modest in the second period (1.2%).

B) Contributing Factors

Natural Increase

The natural increase of a population is the difference between the number of children born and the number of persons who die in a given period. In the

early 1990s, the crude death rate of the populations of aboriginal origin varied between 5 and 8 per 1,000, depending on the aboriginal identity group.[5] The crude birth rate of these populations is estimated at 22 per 1,000 per year for the period 1991-1996 (Table 2). The relative stability of the crude birth rate between the periods 1981-1986 and 1991-1996 contrasts with the variations in total growth shown in the previous table. Admittedly, there was a slight decline in the birth rate, especially among the North American Indian population and persons of aboriginal origin without aboriginal identity, but that is not sufficient to explain the drop in overall growth.

Table 2. Crude Birth Rate for Aboriginal Origin Population by Aboriginal Identity, Canada, 1981-1986 et 1991-1996

Aboriginal Origin Aboriginal Identity	Average Annual Rate (per 1,000)	
	1981-86	1991-96
Aboriginal Origin	23.9	22.1
Aboriginal Identity	26.0	24.2
North American Indian	27.9	25.6
Métis	19.4	19.6
Inuit	31.9	32.3
Multiple Aboriginal	19.0	19.9
Non Aboriginal Identity	20.2	18.5
Non Aboriginal Origin	14.2	13.3

Source: Statistics Canada, Censuses of Canada from 1986 to 1996.

If it is assumed that populations of aboriginal origin perpetuate themselves solely through births and there are no enumeration errors, then natural increase and the total increase should necessarily be equal. But as Figure 3 shows, this is far from being the case, especially for the period 1986-1991. Surprising differences between the natural increase and the total increase are observed in the Indian and Métis populations for both periods and in the population of aboriginal origin without aboriginal identity for the period 1986-1991. Only among the Inuit does the total increase approach the natural increase.

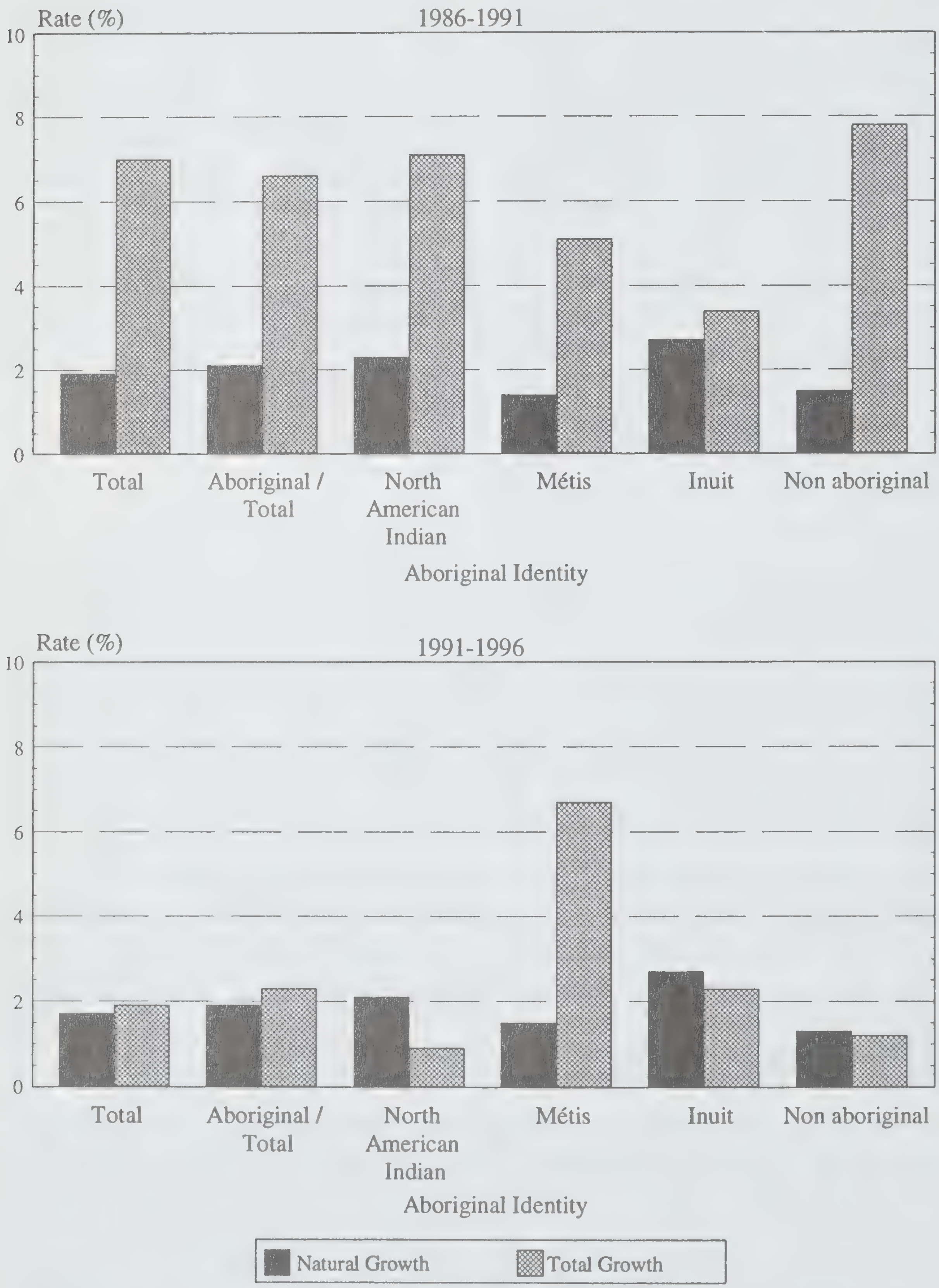
Clearly, while the populations of aboriginal origin have higher fertility than the Canadian population as a whole, this alone does not explain their exceptional growth. The explanation therefore lies elsewhere. Since the contribution of international migration is virtually nil, other factors must be considered.

Variation in the quality of enumerations

It is a known fact that in each enumeration exercise, some individuals are missed —this is the phenomenon known as undercoverage— while others are counted more than once—this is overcoverage. The difference between these two quantities is called *net undercoverage*. It is not so much the numerical value assigned to undercoverage that causes concern, but rather the variation in that value from one census to the next. If it does not vary, then the enumerated

[5] Author's calculations. See M.J. Norris, D. Kerr and F. Nault (1995). *Projections of the Population with Aboriginal Identity in Canada, 1991-2016*. Statistics Canada, Demography Division, 101 pages.

Figure 3. Average Annual Natural Growth Rate[1] and Total Growth Rate[2] for Aboriginal Origin Population According to the Aboriginal Identity, Canada, 1986-1991 and 1991-1996



[1] The crude death rate is assumed to be constant at 5 per 1,000.

[2] Adjusted Rates for partially enumerated aboriginal communities and for the inclusion of non-permanent residents since 1991.

Sources: Statistics Canada, Censuses of Canada from 1986 to 1996 and the 1991 Aboriginal Peoples Survey.

population and the missed population increase at the same rate, and undercoverage does not bias the measurement of growth. If, on the other hand, net undercoverage varies, then the error of the estimate of growth rates is proportional, but its sign is opposite to that of the variation. An increase in undercoverage results in an underestimate of growth, while a decrease in undercoverage results in an overestimate of growth. There is no official estimate of the undercoverage of the populations of aboriginal origin that can be used to quantify precisely the effect of undercoverage on the growth of these populations as measured. According to the information available on the undercoverage of the population residing on fully enumerated Indian reserves, there was no major change in the quality of the enumeration between 1991 (12.6%[6]) and 1996 (13.4%[7]). In order for differential undercoverage to be the only explanation for the difference observed between the 7% increase in populations of aboriginal origin between 1986 and 1991 and the highest rate of natural increase observed at present (3.5%), the quality of enumeration would have to have improved by more than 15% between 1986 and 1991. Such variations in undercoverage are practically impossible. That leaves ethnic mobility.

Ethnic Mobility

The last avenue to explore leads us beyond the paths traditionally trod by demographers and how persons report their ethnicity in the censuses. In light of the information available —on natural increase, migration and quality of enumeration— the extraordinary growth of the Canada's populations of aboriginal origin from 1986 to 1996 is due, in variable proportions depending on the period and the aboriginal identity group, to changes over time in the ethnic identity that individuals report, a phenomenon known as *ethnic mobility*. This phenomenon includes entries and exits. Thus, for the period 1986-1991, when the phenomenon appears to be more prevalent, transfers from a non-aboriginal origin to an aboriginal origin (entries) were more numerous than transfers from an aboriginal origin to a non-aboriginal origin (exits). This phenomenon of ethnic mobility has also been observed in the aboriginal populations of the United States (Eschbach, 1993), Australia (Ross, 1996) and New Zealand (Pool, 1991).

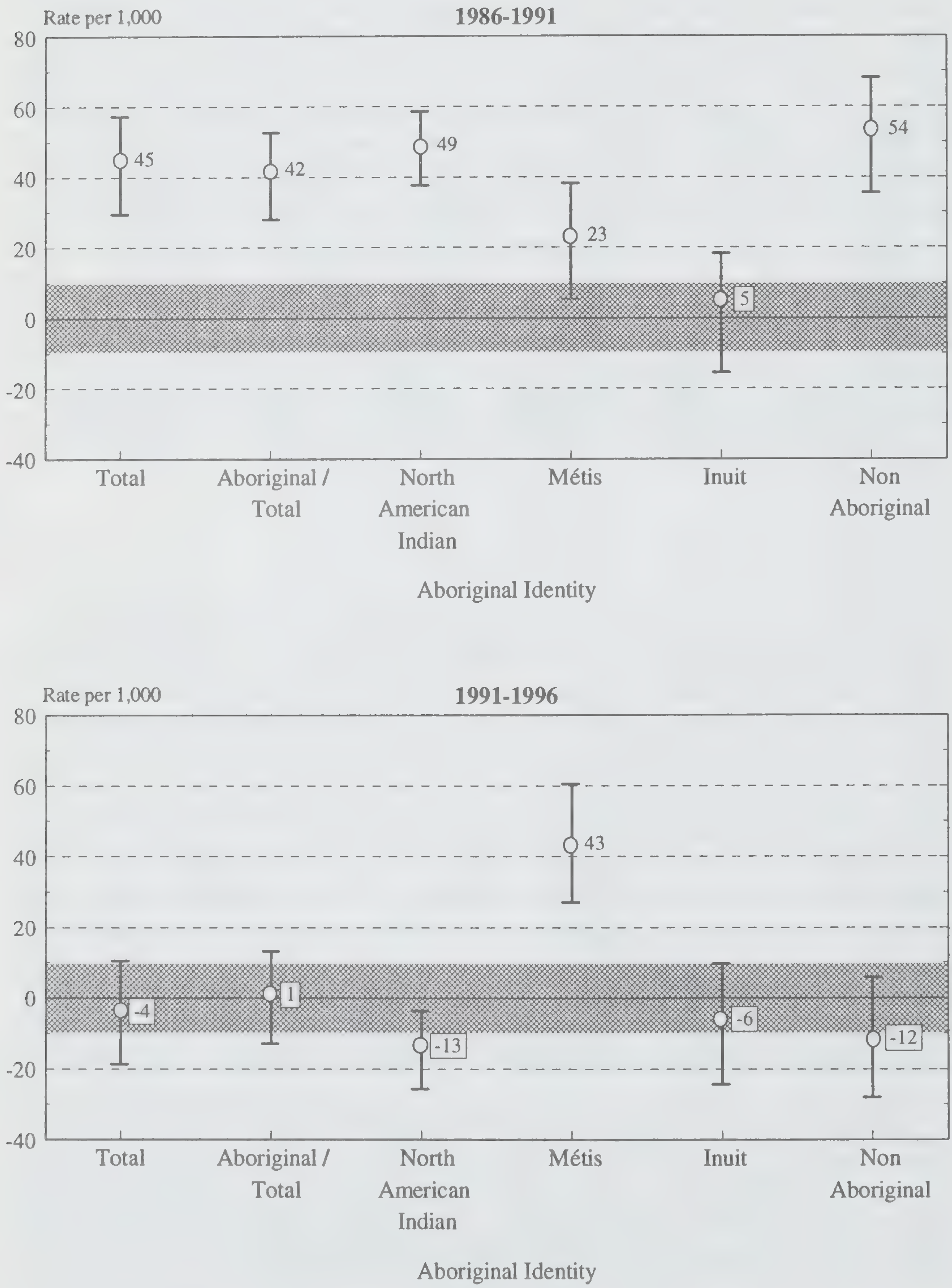
It is basically the exceptional nature of the growth of populations of aboriginal origin from 1986 to 1996 that draws attention to the existence of this phenomenon. However, ethnic mobility has long been a component of the demographic growth of Canada's aboriginal populations. There are numerous signs that it is a contributing factor, including the following:

---

[6] Author's calculations. See M.J. Norris, D. Kerr and F. Nault (1995). *op.cit.*

[7] Author's calculations. Reverse recode check Survey (1996), unpublished table.

Figure 4. Estimates of the Net Ethnic Mobility Rates[1] of Aboriginal Origin Population According to the Aboriginal Identity, Canada, 1986-1991 et 1991-1996



[1] Based on the residual estimates method. Excluding children born during the interval.

Sources: Statistics Canada, Censuses of Canada from 1986 to 1996 and the 1991 Aboriginal Peoples Survey.

- Persons of aboriginal origin who report more than one ethnic origin outnumber those who report a single aboriginal origin;[8] this is the cumulative result of several generations of ethnic mobility.
- More than a third of persons of aboriginal origin do not identify with an aboriginal group (Table 1).
- The Métis, the second largest of the populations with aboriginal identity (Table 1), are the product of ethnic mobility. Particular circumstances relating to the mode of colonization led to the emergence of a third aboriginal cultural entity made up of descendants of Aboriginals and non-Aboriginals.

Ethnic mobility can occur when children's ethnicity is first identified. Parents and children do not necessarily have the same ethnic identification, more especially if the mother and father do not belong to the same ethnic group. Ethnic mobility may also result from a change in individuals' ethnic identification. Only the latter type of ethnic mobility is dealt with in this analysis.

For the period 1986-1991, substantial net ethnic mobility is observed in all populations of aboriginal origin, except for the Inuit. According to available information on the other components, the balance of ethnic transfers stood at 177,200 persons, representing an average annual rate of 45.2 per 1,000 (Figure 4). Over the period as a whole, ethnic mobility resulted in a numerical increase of more than 20%! The populations most benefiting from this phenomenon were the North American Indian population (48.7 per 1,000) and the population of aboriginal origin without aboriginal identity (53.5 per 1,000). For the period 1991-1996, the ethnic mobility of the populations of aboriginal origin as a group was negligible, although the Métis registered strong ethnic mobility (43.2 per 1,000). For the North American Indian population, this intercensal period was characterized by negative ethnic mobility (-12.9 per 1,000), meaning that there were more exits than entries.

While there is no definitive answer to explain such ethnic mobility and the shift that it underwent, several factors may be cited.[9] Probably a major factor is Bill C-31, promulgated in 1985, which changed the rules for transmission of legal Indian status.[10] Furthermore, the media coverage of many events relating to Aboriginal peoples — e.g., the Oka crisis in the summer of 1990, the Royal Commission on Aboriginal Peoples (1991-1996), the territorial

---

[8] In the 1996 Census, 624,300 persons of aboriginal origin reported more than one ethnic origin. This was more than half (57%) of all persons of aboriginal origin.

[9] Including methodological factors such as changes in the question on ethnic origin in the 1996 Census.

[10] From 1985 to 1996, 104,869 persons recovered legal Indian status under Bill C-31 of 1985 (Indian and Northern Affairs Canada (1997: Table 2).

Method for Estimating Ethnic Mobility

The estimate of ethnic mobility is obtained by the method of estimation by residual. This method consists of:

(1) calculating the population expected in year t+n (P^{t+n}) by taking the population observed in t (P^t) and substracting an estimate of deaths (D), adding net migration (M) and all other known factors (net undercoverage of the population) (V) for the observation period (t, t+n), assuming that ethnic mobility is nil;

$$P^{t+n} = \mathrm{P}^{t} - \mathrm{D}_{(t,\ t+n)} + \mathrm{M}_{(t,\ t+n)} + \mathrm{V}_{(t,\ t+n)}$$

(2) subtracting the population expected in year t+n (P^{t+n}) from the population observed in that year (P^{t+n}). The result of this subtraction represents the estimate of net ethnic mobility (ß) during the observation period (t, t+n).

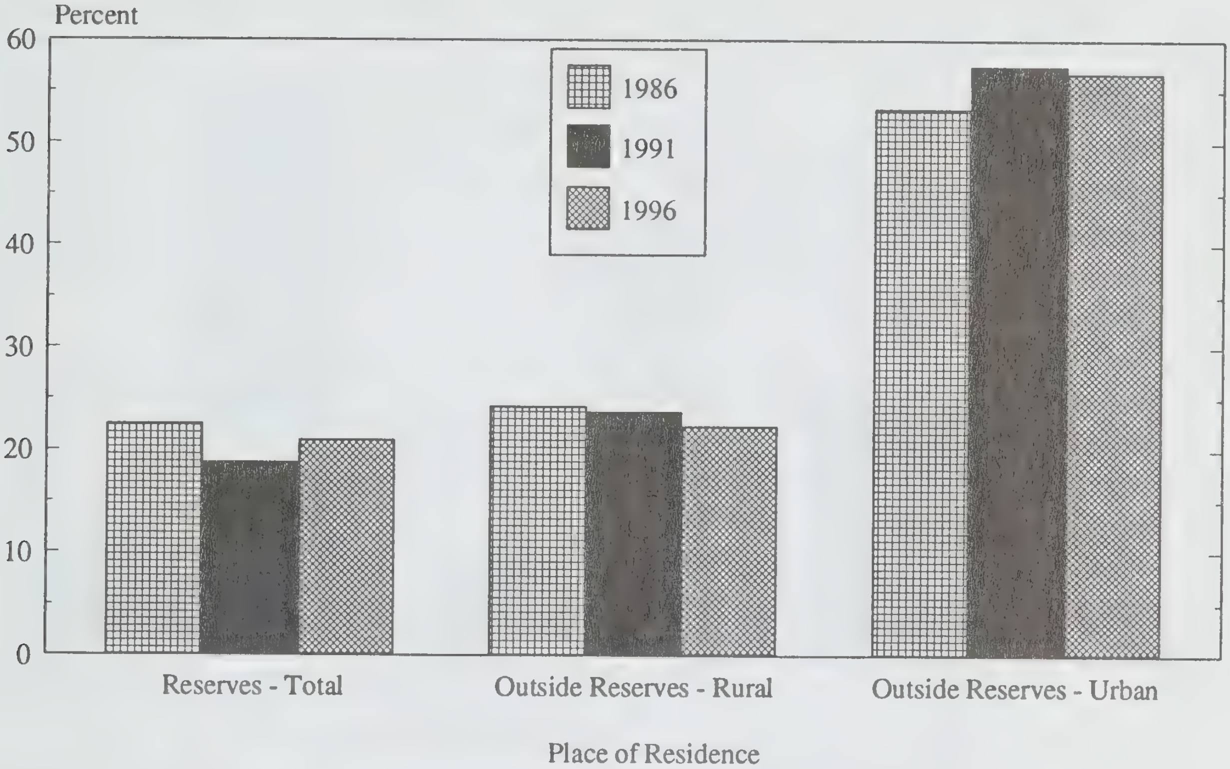
$$ß_{(t,\ t+n)} = \mathrm{P}^{t+n} - P^{t+n}$$

This method may be applied to a population as a whole or by age group. In the past it has been used to estimate changes in the ethnic identification of aboriginal populations in the United States (Eschbach , 1993) and ethnic minorities in the former USSR (Anderson and Silver, 1983).

In the case of a population for which statistics are imperfect, it is preferable to formulate more than one estimation scenario: a reference scenario and a higher and lower scenario establishing a range of possible variation in ethnic mobility. Furthermore, since the estimate thus obtained suffers from the variable quality of enumerations and estimates of components, it is preferable to limit comments to estimates for which the range of variation falls outside the band of -10 to +10 per 1,000.

agreement leading to the creation of Nunavut (1992), the agreements on self-government and land claims — probably all served to heighten the awareness of the Canadian public and also to restore the image of Aboriginal Peoples, which has traditionally tended to be negative. All these factors may have caused some persons to feel more inclined to report an aboriginal identity.

Figure 5. Percentage Distribution of the Aboriginal Origin Population by Place of Residence, Canada, 1986-1996



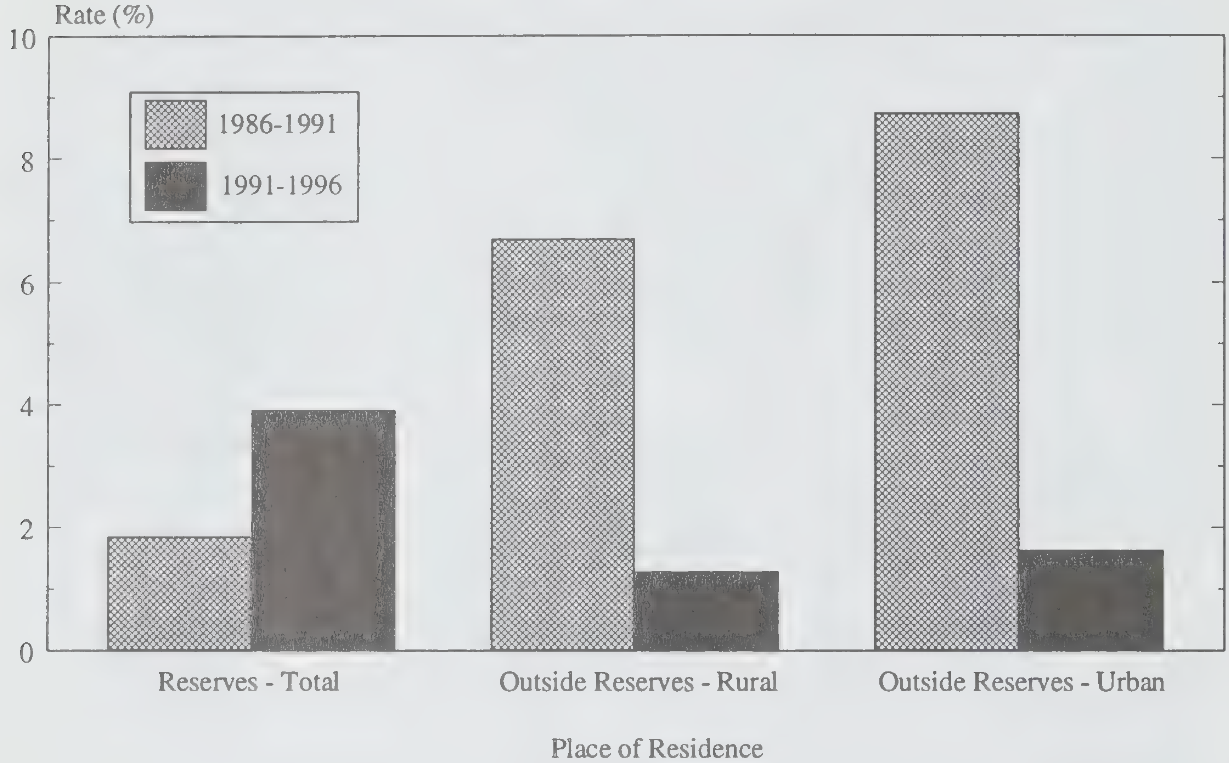
Sources: Statistics Canada, Censuses of Canada, 1986, 1991 and 1996.

C) Growth of Populations of Aboriginal Origin at the Sub-national Scale

In 1996, the great majority (79%) of persons of aboriginal origin were living elsewhere than on Indian reserves (Figure 5), and many were in urban areas (57%). Figures from the previous two censuses in 1986 and 1991 show slight variations in these proportions; these must be interpreted with caution, given the variable participation of aboriginal communities in the Census of Canada.

The exceptional growth of populations of aboriginal origin observed at the national scale occurred off Indian reserves and especially in urban areas (Figure 6). During the period 1986-1991, populations of aboriginal origin in rural and urban areas increased at the remarkable rate of 6.7% and 8.7% per year respectively, greatly exceeding the theoretical maximum for natural increase. On Indian reserves, the growth of populations of aboriginal origin was more modest (1.8%), only slightly greater than that of the population of Canada as a whole (1.5%). For the period 1991-1996, the marked slowdown in the growth of populations of aboriginal origin at the national level (1.9%) resulted from a steep decline in the growth of populations in rural areas (1.3%) and urban areas (1.6%). On Indian reserves (3.9%), the growth accelerated and even surpassed that of off-reserve populations.

Figure 6. Average Annual Growth Rate[1] for Aboriginal Origin Population by Place of Residence, Canada, 1986-1996



[1] Adjusted Rates for partially enumerated aboriginal communities and for the inclusion of non-permanent residents since 1991.

Sources: Statistics Canada, Censuses of Canada from 1986 to 1996 and the 1991 Aboriginal Peoples Survey.

Migration from Indian reserves is often proposed as an explanation for the sizable increase off reserves, especially in Canada's major urban centres. However, recent studies (Norris and Beavon, 1999; Clatworthy, 1996) clearly show that there is not a massive exodus of aboriginal populations from Indian reserves to cities. In fact, from 1966 to 1996, Indian reserves posted a net gain due to migration. For the last two intercensal periods, Indian reserves showed a net migration of +10,100 persons (1986-1991) and +14,100 persons (1991-1996).

The exceptional growth observed during the period 1986-1991 by populations of aboriginal origin residing outside of Indian reserves is primarily due to ethnic mobility. To live on an Indian reserve, it is necessary to have legal Indian status or be recognized or accepted by the resident Indian band. Since the right to settle on a reserve is governed by legal considerations, it is therefore unlikely that residents of Indian reserves will change their ethnic identification. Thus, the ethnic mobility previously identified and measured at the national scale (Figure 4) is taking place outside of Indian reserves, and according to the growth rates observed, it is especially occurring in urban centres, where inter-ethnic contacts are more frequent.

Conclusion

In the census, populations of aboriginal origin registered phenomenal growth during the period 1986-1996. This growth has four components: (1) natural increase; (2) increase due to migration; (3) variations in the quality of enumeration; and (4) ethnic mobility. The latter component is not traditionally within the scope of demographic analysis. However, the extent of ethnic mobility in populations of aboriginal origin supports the idea that this component should be considered in the demographic analysis of all ethnic groups.

Not only is it important to consider ethnic mobility as a component of the demographic growth of Aboriginal populations, it should also be included in the analysis of the socio-demographic characteristics of those populations. For example, within the cohort of persons 25 years of age and over in 1986, the number of postsecondary graduates of aboriginal origin rose from 14,000 to 22,700 between 1986 and 1996, representing a phenomenal leap of 62%.[11] Guimond et al. (Guimond and al. (forthcoming)) show that this increase is in part explained by the "arrival," as a result of ethnic mobility, of more educated individuals, rather than by greater school success among individuals already identified as Aboriginal People in 1986. More analyses of this type will have to be conducted in order to improve our understanding of the phenomenon of ethnic mobility and its consequences. Such analyses are invaluable tools for evaluating programs and policies designed to improve the social and economic conditions of Aboriginal peoples.

[11] Excluding persons in communities that were incompletely enumerated in the 1986, 1991 and 1996 censuses.

BIBLIOGRAPHY

B.A. Anderson. and B.D. Silver (1983). Estimating Russification of Ethnic Identity among Non-Russians in the USSR. ***Demography.*** 20(4): 461-489.

K. Eschbach (1993). Changing Identification among American Indians and Alaska Natives. ***Demography***. 30(4): 635-652.

E. Guimond, N. Robitaille, A.J. Siggner and G.G. Goldmann (forthcoming). ***Aboriginal Peoples in Canada: A New Demographic Perspective***. Ottawa. Statistics Canada.

I. Pool (1991). ***Te Iwi Maori: A New Zealand population past, present and projected***. New Zealand. Auckland. Auckland University Press.

R. Pressat (1979). ***Dictionnaire de démographie***. Paris. Presses Universitaires de France. Pages 245-247.

K. Ross, (1996). ***Population Issues, Indigenous Australians***. Australia. Australian Bureau of Statistics. Occasional Paper 4708.0. 88 pages.

- *Population growth slowed in all provinces except Ontario and Alberta.*
- *British Columbia's population growth is lower than for Canada as a whole, a situation that has occurred only four times since 1921.*
- *Between 1997 and 1998, Canada saw its immigration numbers fall by nearly 42,000 persons, the largest annual decrease since 1958.*
- *Ontario had a positive interprovincial migration balance for the first time since 1988. Migration flows in favour of Alberta strengthened.*
- *The number of marriages in Canada was down again. The figures are the lowest in more than 30 years.*
- *A new downward trend in divorces in Canada appears to have started in 1996. Rates are down for all durations of marriage.*
- *The number of deaths attributable to HIV fell by half in 1997.*
- *Never has fertility been so low in Canada. The number of births fell by 5%, the greatest decrease since 1966. The total fertility rate reached 1.55 children per woman in 1997, the lowest level ever recorded in Canada. All provinces were affected.*
- *In Canada there is a strong relationship between young adults' relative income and their fertility. The relative income of young adults has fallen substantially since 1971, and along with it, their fertility.*
- *The life expectancy of Canadian females and males is today among the longest in the world, and it continues to increase, but faster for males.*
- *Canadian females and males can also expect to live increasingly longer in good health, even at advanced ages. More than 80% of life after age 65 is spent in good health.*

Catalogue no. 91-209-XPE

Report on the Demographic Situation in Canada 2000

Current Demographic Analysis

- Smoking and Disability-Free Life Expectancy in Canada
- Impacts of Causes of Death on Life Expectancy at Higher Ages
- Family Changes and the Economic Well-Being of Preschool-Age Children
- The Emergence of the Blended Family

Statistics Canada Statistique Canada

Canada

How to obtain more information

Specific inquiries about this product and related statistics or services should be directed to: Research and Analysis Section, Demography Division, Statistics Canada, Ottawa, Ontario, K1A 0T6 (telephone: (613) 951-2326).

For information on the wide range of data available from Statistics Canada, you can contact us by calling one of our toll-free numbers. You can also contact us by e-mail or by visiting our Web site.

National inquiries line	**1 800 263-1136**
National telecommunications device for the hearing impaired	**1 800 363-7629**
Depository Services Program inquiries	**1 800 700-1033**
Fax line for Depository Services Program	**1 800 889-9734**
E-mail inquiries	**infostats@statcan.ca**
Web site	**www.statcan.ca**

Ordering and subscription information

This product, Catalogue no. 91-209-XPE, is published annually as a standard printed publication at a price of CDN $31.00. The following additional shipping charges apply for delivery outside Canada:

	Single issue
United States	CDN $ 6.00
Other countries	CDN $ 10.00

All prices exclude sales taxes.

This product can be ordered by

- Phone (Canada and United States) **1 800 267-6677**
- Fax (Canada and United States) **1 877 287-4369**
- E-mail **order@statcan.ca**
- Mail Statistics Canada
  Dissemination Division
  Circulation Management
  120 Parkdale Avenue
  Ottawa, Ontario K1A 0T6
- And, in person at the Statistics Canada Regional Centre nearest you, or from authorised agents and bookstores.

When notifying us of a change in your address, please provide both old and new addresses.

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the Agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact Statistics Canada toll free at 1 800 263-1136.

Statistics Canada
Demography Division

Report on the Demographic Situation in Canada 2000

Current Demographic Analysis

Alain Bélanger, Yves Carrière and Stéphane Gilbert

Published by authority of the Minister
responsible for Statistics Canada

June 2001

Catalogue no. 91-209-XPE

Frequency: Annual

ISSN 0715-9293

Ottawa

The text was originally written in French.
La version française de cette publication est disponible sur demande (n° 91-209-XPF au catalogue).

Note of appreciation

Canada owes the success of its statistical system to a longstanding partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Symbols

..	figures not available.
...	figures not appropriate or not applicable.
-	nil or zero.
--	amount too small to be expressed.

The data analysed in this report were those available at time of writing.

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences - Permanence of Paper for Printed Library Materials, ANSI Z39.48 - 1984.

∞

For further reading

Selected publications from Statistics Canada

Title	Catalogue
Demographic Documents, Occasional	91F0015MPE
Annual Demographic Statistics, 2000	91-213-XPE
Health Reports, Quarterly	82-003-XPB

To order a publication by telephone, please call (613) 951-7277 or 1 800 770-1033; by fax (613) 951-1584 or 1 800 889-9734; by Internet at order@statcan.ca ; or by mail, by writing to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6.

Current Demographic Analysis

In the same series:

REPORT ON THE DEMOGRAPHIC SITUATION IN CANADA
(Catalogue no. 91-209-XPE)

- ***1983 Report***, by J. Dumas - (130 pages - Out of print)

- ***1986 Report,*** by J. Dumas with the collaboration of R. Lachapelle - (138 pages - Out of print)
  - -Childbearing Performance of Married Canadian-born Women
  - -The Fertility of Single Women
  - -The Strengthening of Majority Positions

- ***1988 Report,*** by J. Dumas with the collaboration of C.F. Grinstaff - (157 pages - $21.00)
  - -The Termination of Pregnancy in a Population Perspective
  - -Long-term Consequences of Adolescent Marriage and Fertility

- ***1990 Report***, by J. Dumas - (112 pages - $26.00)
  - -Recent Evolution of the Canadian and American Populations

- ***1991 Report***, by J. Dumas with the collaboration of A. Bélanger and C. Fortier - (181 pages - Out of print)
  - -Overview of the Principal World Migratory Flows Since World War II

- ***1992 Report***, by J. Dumas with the collaboration of Y. Lavoie - (157 pages - $26.00)
  - -Age Structure in Mutation - Two Centuries of Demographic Change

- ***1993 Report***, by J. Dumas - (221 pages - $26.00)
  - -Mexico's Demographic Challenges (An Overview)

- ***1994 Report***, by J. Dumas and A. Bélanger - (151 pages - Out of print)
  - -The Sandwich Generation: Myths and Reality

- ***1995 Report***, by J. Dumas and A. Bélanger with the collaboration of G. Smith - (195 pages - $30.00)
  - -Demographic Similarities and Differences between Ontario and Quebec

- ***1996 Report***, by J. Dumas and A. Bélanger with the collaboration of G. Smith - (186 pages - $30.00)
  - -Common-Law Unions in Canada at the End of the 20th Century

Current Demographic Analysis

In the same series (continued):

REPORT ON THE DEMOGRAPHIC SITUATION IN CANADA - Concluded
(Catalogue no. 91-209-XPE)

- ***1997 Report***, by A. Bélanger and J. Dumas with the collaboration of C. Oikawa and L. Martel - (185 pages - $30.00)
  - -Effects of the Social Environment of Elderly Persons on their Socio-Economic Condition
- ***1998-1999 Report***, by A. Bélanger with the collaboration of S. Gilbert - (200 pages - $30.00)
  - -Relative Income, Opportunity Cost and Fertility Changes
  - -Dependence-free and Health-adjusted Life Expectancy
  - -Ethnic Mobility and Demographic Growth of Aboriginal Populations

OCCASIONAL

- ***Fertility in Canada: from Baby-boom to Baby-bust***, by A. Romaniuc - (Catalogue no. 91-524E, 1984, 156 pages - Out of print)
- ***Income of Immigrants***, by R. Beaujot, K.G. Basavarajappa and R.B.P. Verma - (Catalogue no. 91-527E, 1988, 101 pages - $20.00)
- ***Caribbean Immigrants***, by A.H. Richmond - (Catalogue no. 91-536E, 1989, 85 pages - Out of print)
- ***New Trends in the Family,*** by B. Ram - (Catalogue no. 91-535E, 1990, 96 pages - Out of print)
- ***Marriage and Conjugal Life in Canada***, by J. Dumas and Y. Péron - (Catalogue no. 91-534E, 1992, 154 pages - Out of print)
- ***Aging of the Population and Seniors in Canada,*** by B. Desjardins - (Catalogue no. 91-533E, 1993, 128 pages - Out of print)
- ***Family over the Life Course***, by R. Beaujot, E.M. Gee, F. Rajulton and Z.R. Ravanera - (Catalogue no. 91-543E, 1995, 173 pages - Out of print)

Current Demographic Analysis

In the same series (concluded):

DEMOGRAPHIC DOCUMENTS
(Catalogue no. 910015MPE)

- Document no. 1: "***Fertility Projections for Canada, Provinces and Territories, 1993-2016***" by R.B.P. Verma, S. Loh, S.Y. Dai and D. Ford - (1996, 28 pages, $10.00)
- Document no. 2: "***The Population in Collective Dwellings: Canada, 1971-1991***" by G. Smith - (1996, 50 pages, $10.00)
- Document no. 3: "***New Birth Cohort Life Tables for Canada and Quebec, 1801-1991***" by R. Bourbeau, J. Légaré and V. Emond - (1997, 94 pages, $10.00)
- Document no. 4: "***Advantages of the One Year Mobility Variable for Breaking Down Interprovincial Migration by Age, Sex and Marital Status***" by M. Bédard and M. Michalowski - (1997, 58 pages, $10.00)
- Document no. 5: "***A Review of Procedures for Estimating the Net Undercount of Censuses in Canada, the United States, Britain and Australia***" by D. Kerr - (1998, 28 pages, $10.00)

Acknowledgements

The authors are grateful to all those who have contributed to this publication. In particular, the authors address theirs thanks to Réjean Lachapelle, Doug Norris, Gilles Montigny and Mike Sheridan for their revision and comments and to Pierre Turcotte and Russel Wilkins for their comments on different parts of this Report. Special thanks are addressed to Carol D'Aoust, research assistant, for his dedication and initiative which are fully appreciated.

Table of Contents

List of Tables

List of Tables - Continued

List of Tables - Continued

Page

List of Figures

Page

PART I

PART II

Smoking and Disability-Free Life Expectancy in Canada

List of Figures- Continued

Page

Impact of Causes of Death on Life Expectancy at Higher Ages from 1951 to 1996

Family and Demographic Changes and the Economic Well-being of Preschool-age Children in Canada, 1981-1997

A Step Further in Family Life: The Emergence of the Blended Family

List of Figures- Concluded

Highlights

PART I

- In 1999, the Canadian population increased by 254,500 which represents a growth rate of 8.4 per 1,000. This increase is slightly higher than the rate of 7.9 per 1,000 observed in 1998.

- The rate of natural increase slightly declined in 1999, going from 4.1 per 1,000 in 1998 to 3.6 per 1,000 in 1999. The faster demographic growth recorded in 1999 results from a higher increase in the net migration rate, which climbed from 3.8 per 1,000 in 1998 to 4.8 per 1,000 in 1999.

- Alberta experienced the largest demographic growth in the country in 1999 with a growth rate of 13.7 per 1,000. Ontario follows with a growth rate of 12.4 per 1,000.

- In 1999, two Canadian provinces, Newfoundland and Saskatchewan, experienced negative demographic growth of 3.8 per 1,000 and 1.4 per 1,000 respectively.

xxx

- In 1998, there were 69,100 divorces registered in Canada. This represented a small increase of 2.5% over 1997.

- The total divorce rate is estimated at 3,399 divorces per 10,000 marriages in 1998. This means that if, for the next 25 years, the divorce rate by duration of the marriage corresponded to that observed in 1998, 34% of these marriages would end in divorce. This represents a 3.9% increase over the total divorce rate of 1997.

xxx

- In 1998, there were 342,400 births in Canada, which represents a decline of 1.8% over the number recorded in 1997. The number of births declined in all provinces except Alberta.

- At 1.54 children per woman the total fertility rate observed in 1998 is the lowest ever recorded for the country.

- Newfoundland, with the lowest fertility rate in the country, saw its number of births fall by 7.8% in 1998, the largest relative decline in number of births.
- Saskatchewan, with a rate of 1.82 children per woman, has the highest rate of all provinces.

XXX

- In 1999, Canada admitted 190,000 immigrants, this represents a rate of 6.2 per 1,000. This is an increase of 16,000 over the number of immigrants admitted the previous year.
- More than 105,000 immigrants were admitted under the economic category, an increase of 10,500 from the previous year. Economic immigrants accounted for 55% of the total.
- In 1999, Canadian immigration was primarily Asian. The number of immigrants originating from Asia amounted to 113,300 and represented 60% of the total.
- Some 104,000 immigrants, representing 55% of all immigrants admitted, choose Ontario as their province of destination. British Columbia and Quebec were the other two provinces receiving the greatest number of immigrants, although in more modest proportions. They received respectively 36,100 (19%) and 29,200 (15%) immigrants.

XXX

- As the main hub of internal migration, Ontario is the province that has the most migratory movements. Some 80,000 persons coming from another Canadian province established residence in Ontario during the year 1999, while the number of out-migrants is estimated at 63,300. With a positive balance of 16,600, Ontario posted the biggest migratory gain in 1999.
- In 1999, the Atlantic provinces improved their migratory exchange with the other Canadian provinces. Prince Edward Island, Nova Scotia and New Brunswick, which had a negative balance in 1998, posted a positive balance in 1999.
- In 1999, Alberta had a gain of 14,000 persons in its migratory exchanges with other Canadian provinces, but this positive balance is much smaller than the 40,100 recorded on the previous year.

PART II

- Life expectancy at age 45 is considerably shorter for smokers compared to non-smokers: for men, a gap of 7 years exists between those two populations, raising to 10 years for women.
- For every 100 male non-smokers living at age 45, more than 90 will survive to age 65 and approximately 55 will still be living at age 80. For smokers, these numbers are 80 survivors at age 65 and fewer than 30 survivors at age 80. The trend is similar for women.
- At every age and for both sexes, smokers have a greater probability of becoming disable than non-smokers: they also have a smaller chance of recovering it once it is lost.
- Virtually all (95%) of the additional years of life that a non-smoker can expect to live longer than a smoker will be lived free of disability. On average, a smoker will not only die younger than a non-smoker, but he will also be limited or dependent in his daily activities much earlier than a non-smoker.
- Male smokers can expect, at age 45, to spend 63% of their remaining years living free of disability; this percentage raises to 70% for non-smokers. For women, the trend is the same: 56% of life expectancy at age 45 will be lived free of disability for those who smoke compared with 61% for those who do not smoke.
- At age 80, one out of four men and one out of three women is living free of functional disability among the non-smoking population; this proportion is below one out of ten persons both for men and women smokers.

xxx

- Among those aged 60 and over, the decline in the number of deaths between 1951 and 1996 is largely attributable to a decrease in diseases of the circulatory system. On the other hand, deaths caused by cancer and diseases of the respiratory system increased.
- Over the period from 1951 to 1996, deaths due to cancers saw their share of all deaths increase from 14% to 27% for males and from 16% to 29% for females.
- Between 1951 and 1996, the decrease in mortality due to diseases of the circulatory system after age 60 resulted in gains in life expectancy at that age of 3.4 years and 5.2 years for males and females, respectively.

xxx

- Overall, Canadian families with pre-school age children enjoyed only a moderate increase in their average level of economic well-being over the 1981-1997 period. Among families with preschool age children, an increase in economic well-being during the 1981-1989 period was followed by a slight decline between 1989-1997. Average income rose from $51,542 in 1981 to 56,524 in 1989, and then fell again to $54,245 by 1997.

- The most harmful trend, from the point of view of meeting the economic needs of young children has been a steady rise in the number of lone parent families. In 1981, about 1 in 10 families with preschoolers was headed by a lone parent, compared with about 1 in 6 in 1997.

- Recent trends toward smaller family size and deferred childbearing have had a beneficial impact on the economic well-being of families with young children.

- The overall impact of family and demographic change was relatively modest in the 1981-1997 period. While recent trends in lone parenthood have had an important negative impact on the average level of economic well-being of young children, this has been offset by ongoing changes, of lesser importance, in the timing and level of childbearing and an increase in the number of earners per family.

- From 1981 to 1997, the percentage of families with pre-school age children characterized by no earners doubled, going from 5% to 10%.

xxx

- More and more children experience life with a lone parent and this occurs at an increasingly early age. Among children born in the early 1960s, 20% had lived part of their life with a lone parent by the age of sixteen. Children born a decade later had reached this level by the age of twelve, those born in the early 1980s by the age of seven, and for the most recent cohorts, by the age of five.

- More and more children have to adjust to the presence of a stepparent. Two to three years after a separation, one or both parents of almost half the children of separated couples had entered a new union.

- The lower the age of the mother and the youngest child, the more likely is a birth to occur to the new union and transform this stepfamily into a blended family. On the other hand, the number of children already present has no significant effect on the decision to have another child in a stepfamily.

- Children born into stepfamilies were more at risk of family breakdown than children born into intact families. At ten years of age, 43% of these children had separated parents, more than double the percentage found among children in intact families.

Part I

DEMOGRAPHIC ACCOUNTING

On January 1, 2000, the Canadian population was estimated to be 30,605,700 inhabitants.[1] ***This is an estimated increase of 254,500 from January 1999, representing a growth rate of 8.4 per 1,000*** (Table 1). This increase is slightly higher than the rate of 7.9 per 1,000 observed in 1998. ***The increasing growth rate actually masks a slight decline in rate of natural increase, estimated at 3.6 per 1,000 in 1999, compared with 4.1 per 1,000 in 1998***. The rate of natural increase, which has fallen steadily since 1990 when it was at 7.7 per 1,000, has decreased by half in less than a decade. In 1999, the surplus of births to deaths was estimated at 108,800, a figure that was almost twice as high (213,500) at the start of the decade. Based on recent trends, natural increase in 2000 will likely be less than 100,000 for the first time since 1925. A low fertility rate, combined with a drop in the number of women of childbearing age, translates into a continued decline in the number of births. To this trend, we must add the rise in the number of deaths, attributable to the fact that more and more people are reaching ages when mortality is especially high. The rate of natural increase is therefore declining both because of the drop in the number of births and because of the increase in the number of deaths, trends that are structural not contextual. The lower birth rate and lower mortality rate among persons 65 years and older have another consequence: an increase in the percentage of elderly persons, which reached 12.5% in January 2000.

There has been a concomitant rise in migration with the rate climbing from 3.8 per 1,000 in 1998 to 4.8 per 1,000 in 1999. In absolute numbers, net migration has climbed 26%, rising from 115,300 to 145,700 in a single year. This is the first time since 1995 that this rate has risen. ***In 1999, Canada welcomed 190,000 immigrants, representing an immigration rate of 6.3 per 1,000***. While immigration was higher than in 1998 (5.8 per 1,000), the rate is still about 20% below the average rate recorded between 1989 and 1998 (7.8 per 1,000).

In summary, the increase in overall growth results from a relatively large increase in net migration which, for the moment, more than offsets the continued decline in the surplus of births to deaths. Given the trends in recent years and the structural aspect of the reduction in the rate of natural increase, net migration will have to continue to climb for the total growth rate to remain at the level observed in recent years.

Several changes in the methodology used to estimate emigration has been implemented. The main reason for the change is linked to the fact that in

---

[1] Statistics on demographic accounting for 1999 were what was available as of September 14, 2000. They may differ slightly from those included in other tables related to the components.

Table 1. Population as of January 1st and Population Growth Components, Canada, 1972-2000
NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Non Permanent Residents (net)	Residual [1]
		Total	Natural	Migratory						
1972	22,093.1	256.0	184.9	98.8	347.3	162.4	122.0	26.2	3.0	-27.7
1973	22,349.2	303.0	179.3	151.4	343.4	164.0	184.2	40.7	7.9	-27.7
1974	22,652.2	325.6	178.9	174.5	345.6	166.8	218.5	42.0	-2.0	-27.7
1975	22,977.8	326.0	192.1	161.5	359.3	167.2	187.9	34.3	7.9	-27.7
1976	23,303.8	288.0	193.0	118.2	360.0	167.0	149.4	28.3	-3.0	-23.1
1977	23,591.8	258.7	194.7	83.8	362.2	167.5	114.9	29.1	-2.0	-19.8
1978	23,850.5	222.0	190.2	51.7	358.4	168.2	86.3	31.7	-3.0	-19.8
1979	24,072.6	273.6	197.9	95.5	366.1	168.2	112.1	24.5	7.9	-19.8
1980	24,346.2	319.8	199.2	140.4	370.7	171.5	143.1	17.6	14.9	-19.8
1981	24,665.9	313.9	200.3	134.3	371.3	171.0	128.6	24.6	30.3	-20.8
1982	24,979.8	263.6	198.7	86.4	373.1	174.4	121.1	31.1	-3.7	-21.4
1983	25,243.4	239.5	199.2	61.7	373.7	174.5	89.2	31.8	4.4	-21.4
1984	25,482.9	238.7	201.3	58.8	377.0	175.7	88.2	29.1	-0.3	-21.4
1985	25,721.6	241.4	194.4	68.4	375.7	181.3	84.3	26.9	11.0	-21.4
1986	25,963.1	297.1	188.7	122.1	372.9	184.2	99.2	23.7	46.5	-13.7
1987	26,260.1	349.5	184.8	172.9	369.7	185.0	152.1	20.1	40.9	-8.2
1988	26,609.7	432.2	186.8	253.6	376.8	190.0	161.9	17.2	108.9	-8.2
1989	27,041.9	433.3	201.7	239.7	392.7	191.0	192.0	19.6	67.4	-8.2
1990	27,475.2	388.4	213.5	183.1	405.5	192.0	214.2	20.2	-11.0	-8.2
1991	27,863.6	319.7	207.0	137.3	402.5	195.6	230.8	25.3	-68.3	-24.6
1992	28,183.3	365.1	202.1	199.2	398.6	196.5	252.8	21.7	-31.9	-36.3
1993	28,548.3	317.5	183.5	170.3	388.4	204.9	255.7	22.2	-63.3	-36.3
1994	28,865.8	325.3	178.0	183.6	385.1	207.1	223.8	23.7	-16.5	-36.3
1995	29,191.1	318.3	167.3	187.3	378.0	210.7	212.0	24.9	0.2	-36.3
1996	29,509.4	309.1	153.3	170.9	366.2	212.9	226.1	41.7	-13.5	-15.1
1997	29,818.6	293.4	132.9	160.5	348.6	215.7	216.0	55.7	0.2	...
1998 PD	30,112.0	239.3	123.9	115.3	343.0	219.1	174.2	57.8	-1.1	...
1999 PR	30,351.3	254.5	108.8	145.7	335.6	226.8	190.0	60.9	16.6	...
2000 PR	30,605.7	..	..	..	..	..	..	..	..	...

RATES (for 1,000)

Year	Population as of January 1st (in thousands)	Growth			Birth	Death	Immigration	Emigration	Non- permanent Residents
		Total	Natural	Migratory					
1972	22,093.1	11.52	8.32	4.45	15.63	7.31	5.49	1.18	0.13
1973	22,349.2	13.47	7.97	6.73	15.26	7.29	8.19	1.81	0.35
1974	22,652.2	14.27	7.84	7.65	15.15	7.31	9.58	1.84	-0.09
1975	22,977.8	14.09	8.30	6.98	15.53	7.22	8.12	1.48	0.34
1976	23,303.8	12.28	8.23	5.04	15.35	7.12	6.37	1.21	-0.13
1977	23,591.8	10.91	8.21	3.53	15.27	7.06	4.84	1.23	-0.08
1978	23,850.5	9.27	7.94	2.16	14.96	7.02	3.60	1.32	-0.12
1979	24,072.6	11.30	8.17	3.95	15.12	6.95	4.63	1.01	0.33
1980	24,346.2	13.05	8.13	5.73	15.13	7.00	5.84	0.72	0.61
1981	24,665.9	12.64	8.07	5.41	14.96	6.89	5.18	0.99	1.22
1982	24,979.8	10.50	7.91	3.44	14.86	6.95	4.82	1.24	-0.15
1983	25,243.4	9.44	7.85	2.43	14.73	6.88	3.52	1.25	0.17
1984	25,482.9	9.32	7.86	2.30	14.73	6.86	3.45	1.14	-0.01
1985	25,721.6	9.34	7.52	2.65	14.54	7.02	3.26	1.04	0.42
1986	25,963.1	11.38	7.23	4.68	14.28	7.06	3.80	0.91	1.78
1987	26,260.1	13.22	6.99	6.54	13.99	7.00	5.75	0.76	1.55
1988	26,609.7	16.11	6.96	9.45	14.05	7.08	6.04	0.64	4.06
1989	27,041.9	15.89	7.40	8.79	14.41	7.01	7.04	0.72	2.47
1990	27,475.2	14.04	7.72	6.62	14.65	6.94	7.74	0.73	-0.40
1991	27,863.6	11.41	7.39	4.90	14.36	6.98	8.24	0.90	-2.44
1992	28,183.3	12.87	7.13	7.02	14.05	6.93	8.91	0.76	-1.13
1993	28,548.3	11.06	6.39	5.93	13.53	7.14	8.91	0.77	-2.20
1994	28,865.8	11.21	6.13	6.32	13.27	7.13	7.71	0.82	-0.57
1995	29,191.1	10.85	5.70	6.38	12.88	7.18	7.22	0.85	0.01
1996	29,509.4	10.42	5.17	5.76	12.34	7.18	7.62	1.40	-0.45
1997	29,818.6	9.79	4.44	5.36	11.63	7.20	7.21	1.86	0.01
1998 PD	30,112.0	7.91	4.10	3.81	11.35	7.25	5.76	1.91	-0.04
1999 PR	30,351.3	8.35	3.57	4.78	11.01	7.44	6.23	2.00	0.54
2000 PR	30,605.7	..	..	..	..	..	..	..	..

[1] The residual consists of the distribution over five years of the error of closure at the end of the intercensal period.

Note: (PD) Final postcensal estimates, (PR) Revised postcensal estimates, based on 1996, as of September 14, 2000.

Sources: Statistics Canada, Demography Division, Population Estimates Section and Research and Analysis Section.

1996 a major end of period error was noted that arose from an underestimation of departures from the country. The findings of the 1996 Reverse Record Check (RRC), a survey that measures census coverage, showed on the one hand permanent emigration in the same order of magnitude as had been estimated, and on the other hand, a significant increase between 1991 and 1996 in temporary emigration. The decision was made to add to the “emigration” component for the 1996 to 2001 period an estimate of the net change in the number of persons temporarily abroad. Prior to 1996, it was assumed that the number of persons temporarily leaving the country was the same as the number of persons who returned. It was therefore assumed that the net change in the number of Canadians temporarily abroad was zero.

Since 1996, the “emigration” component of Table 1 has therefore included, in addition to the estimate of the number of permanent emigrants, an estimate of the net change in the number of persons temporarily abroad, as well as the “returning Canadians” component; in the past, the latter component was reported in a separate column of the table. Changes have also been made to the methodology of the “returning Canadians” component. As a result, the estimate of the number of returning Canadians is now based on an annual estimate of these returning persons obtained from the Child Tax Benefit records. Prior to 1996, this estimate was based on the rate of departure of Canadians emigrating to the United States, a rate derived from an outdated American survey that perhaps no longer represented the modern reality. Given that these changes have applied since July 1, 1996, data prior to that date are not exactly comparable to the recent statistics.

Demographic Accounting of the Provinces

Canada’s demographic growth is the result of sometimes considerable differences from one province or territory to another. ***In 1999, two Canadian provinces, Newfoundland and Saskatchewan, experienced negative demographic growth, or a decline, of 3.8 per 1,000 and 1.4 per 1,000 respectively***. Since in both instances there was only a slight downturn in the rate of natural increase and both provinces are relatively unaffected by international immigration, the variations in overall growth are due primarily to changes in interprovincial migration. ***There were growth rates of more than 10 per 1,000 (13.7 and 12.4 respectively) in Alberta and Ontario***. Only one other province, British Columbia, had a rate of increase higher than the Canadian average at 9.2 per 1,000. Compared with the situation in 1998, only Saskatchewan and Alberta recorded a slowdown in their rate of increase.

With respect to the situation in Newfoundland in 1999, the negative rate of increase in that province of -3.8 per 1,000 was in fact a significant change observed in the large decreases experienced in recent years. The previous year, Newfoundland recorded a negative growth rate of -12.8 per 1,000, which was slightly lower than the 1997 rate (-13.2 per 1,000). During the previous

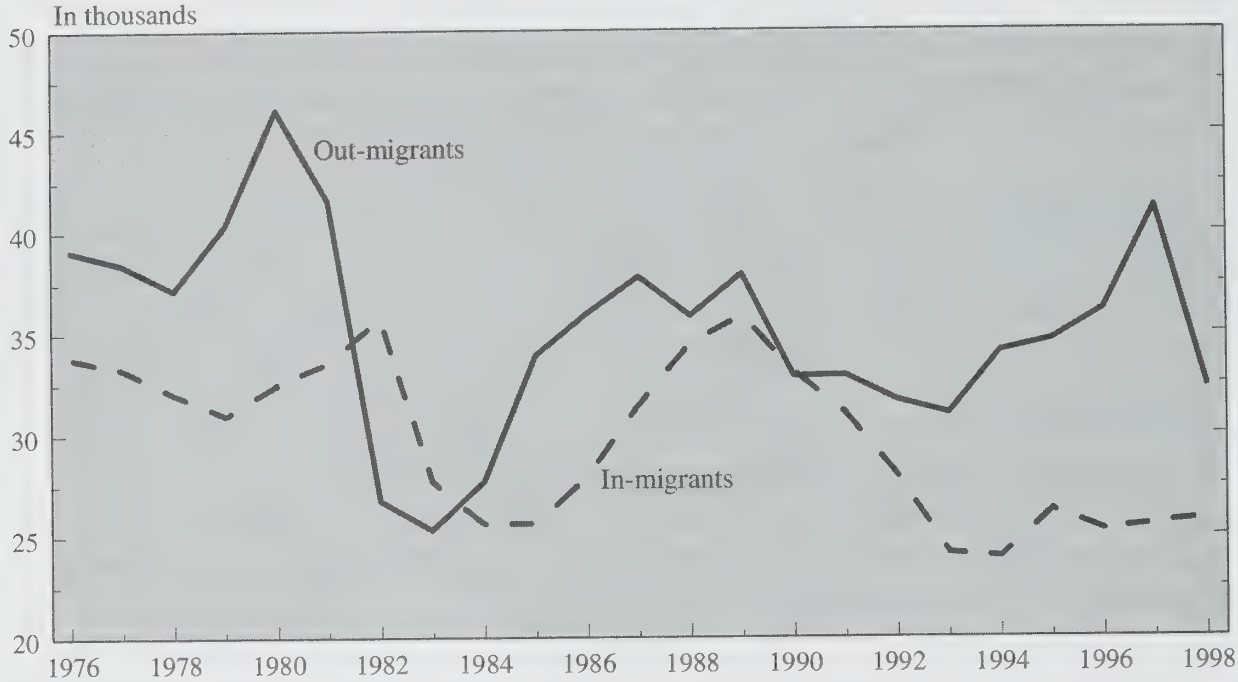
five years, the total rate of increase in this province was consistently below -10.0 per 1,000, with an annual average of -12.2 per 1,000. Expressed in numbers, Newfoundland recorded annual losses of more than 6,000 during this same period. In 1999, those losses were approximately 2,000. It remains to be seen whether this is a temporary phenomenon or a new trend linked to the exploitation of oil, gas and mineral resources.

The estimated balance of births to deaths (approximately 300 persons) in Newfoundland remains the weakest in the country, translating into a rate of natural increase of 0.5 persons per 1,000 inhabitants, almost seven times less than the national average (3.6 per 1,000). This low rate of natural increase is attributable in large part to Newfoundland's low fertility rate (1.21 children per woman in 1998), but also indirectly to the large negative net migration of recent years. Migration involving primarily the young, departure rates in the order of those recorded for this province since 1993 tend to reduce in subsequent years the number of persons reaching the age of peak fertility. The rate of natural increase, in the past high in this province, is no longer able to offset the migration losses and may even turn negative before long. Indeed, relying on the average scenario of recent demographic projections by Statistics Canada, the rate of natural increase in this province may turn negative as early as 2002-2003.

Newfoundland is the only Atlantic province to experience a negative growth rate. Prince Edward Island, for example, had a growth rate in 1999 that was very close to the national average, 8.2 per 1,000 (compared to 3.2 per 1,000 in 1998). Nova Scotia and New Brunswick, with growth rates of 4.0 and 2.8 per 1,000 respectively have also seen an improvement in their rate of demographic increase. Despite demographic accounting that shows encouraging signs, it should be noted that the natural increase remains below 2.0 per 1,000 in all of the Atlantic provinces, and even below 1.0 per 1,000 in Nova Scotia and Newfoundland.

The stronger growth rates in 1999 are therefore the result of a net improvement, compared with recent years, in the region's net migration, especially in interprovincial migration (Figure 1). In 1999, the number of persons leaving the Atlantic provinces for other provinces fell for the first time since 1993. The number decreased from 41,200 persons in 1998—the highest level recorded since 1981—to 32,400 persons in 1999. During the same period, the number of persons entering from other Canadian provinces remained relatively stable, around 25,000 annually. Thus, net migration between the four Atlantic provinces and the rest of Canada improved by more than half, falling from -15,700 persons in 1998 to -6,500 persons in 1999. Although net migration levels for the past year are still interim estimates obtained from a different source (Child Tax Credit records), the magnitude of this decrease may indicate an improvement in migration trends for this region of the country. Only Newfoundland experienced negative net migration in 1999, whereas net

Figure 1. Interprovincial Migration Between the Atlantic Provinces and the Rest of Canada, 1976-1998



Source: Statistics Canada, Demography Division, Population Estimates Section.

migration had been negative in Nova Scotia for the past six years, and only positive once in New Brunswick since 1985.

Saskatchewan is the only other province to post a negative rate of growth (-1.4 per 1,000) in 1999, although the decline was still below that of Newfoundland. In the case of Newfoundland, the 1999 rate was a comparative improvement over previous years, while it represented a deterioration in Saskatchewan's demographics, since this province had not registered negative growth since the early nineties. Although the rate of natural increase is falling off slightly in this province, the main reason for the downturn in demographic growth is an increasingly sharp decline in net interprovincial migration. It should be noted that Saskatchewan has the largest percentage of persons aged 65 years and over, accounting for 14.5% of the population compared to 12.5% for Canada as a whole.

There was an increase in the growth rate in Manitoba, rising from 2.7 per 1,000 in 1998 to 4.8 per 1,000 in 1999. It is interesting to note that, in 1999, this province reported a positive growth in migration for the first time since 1986, even though net interprovincial migration remained negative. This deficit in interprovincial flow was the lowest recorded since 1984 (a negative balance of -1,400 persons in 1999 compared to -10,000 ten years earlier).

As was the case for the previous two years, ***Alberta experienced the largest demographic growth in the country in 1999 (13.7 per 1,000)***, even though this rate represented a downturn for the province (23.0 per 1,000 in 1998). On January 1, 2000, the population of Alberta was approaching the three million mark, a level that it should surpass during the next year if its rate of growth remains at the levels observed since the late eighties. The drop in the growth rate in 1999 followed two previous years in which rates exceeded 20 per 1,000. The net interprovincial migration fell from 40,100 to 14,000 persons between 1998 and 1999. This indicates that Alberta's attractiveness has fallen off over the past year after reaching particular high levels in 1997 and 1998. It should also be noted that this province's strong attraction for workers from other provinces has slowed its demographic ageing given that a large portion of the new arrivals are young workers. Indeed, in 1999, Alberta had the lowest percentage of elderly persons of any Canadian province at 10.1%.

As of January 1, 1999, British Columbia passed the 4 million inhabitants mark. This province, which has long enjoyed above average demographic growth, nevertheless recorded a lower rate of growth in 1998 than Canada as a whole for the same year (6.6 compared to 7.9 per 1,000 respectively). The situation returned to normal in 1999: the rate of increase was 9.2 per 1,000, once again surpassing the national average (8.4 per 1,000). This rate is still relatively low compared to the trends previously observed for this province, which recorded an average annual rate of increase of 21.4 per 1,000 over the previous 20 years. In 1999, for the first time in a quarter century, British Columbia posted negative net interprovincial migration (-8,100 persons) for the second consecutive year. In 1999, for the first time since 1993, the number of departing citizens fell compared with the previous year, declining from 64,000 in 1998 to 59,200. The number of persons entering the province also rose for the first time since 1992. Net international migration remained positive (28,600 persons), but at its lowest level since the start of the decade.

The two most populated provinces—Quebec and Ontario—both posted an increase in their rate of demographic growth in 1999. In Ontario's case, the increase was significant, moving from 10.9 per 1,000 to 12.4 per 1,000, while Quebec's increase was smaller, climbing from 3.2 to 3.4 per 1,000. Although net interprovincial migration remained negative in Quebec, it fell from -14,500 to -13,600 persons between 1998 and 1999. This change was attributable not to a decrease in the number of persons leaving Quebec, which rose from 34,700 to 35,700 persons, but rather to an increase in the number of new arrivals, which climbed from 20,200 to 22,100 persons during this period. In the case of international migration, Quebec attracted 29,200 immigrants in 1999, placing it third among Canadian provinces, behind Ontario and British Columbia (104,100 and 36,100 respectively). Despite the significant influx of immigrants, offset by negative net interprovincial migration, Quebec's rate of migration in 1999 was still the third lowest among Canadian provinces,

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1999

	Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.
Birth Rate (per 1,000)	1981	17.7	15.4	14.1	14.9	14.6	13.9	15.5
	1986	14.1	15.0	13.9	13.5	12.6	14.2	15.6
	1991	12.4	14.4	13.1	12.7	13.8	14.5	15.6
	1995	10.3	13.0	11.6	11.4	12.1	13.3	14.3
	1996	10.2	12.5	11.3	10.9	11.7	12.6	13.7
	1997	9.8	11.6	10.6	10.5	10.9	11.8	12.9
	1998	9.2	10.9	10.2	10.5	10.4	11.7	12.8
	1999 (P)	8.8	10.7	10.0	10.2	10.0	11.3	12.5
Mortality Rate (per 1,000)	1981	5.6	8.0	8.1	7.3	6.5	7.1	8.3
	1986	6.1	8.7	8.2	7.5	7.0	7.2	8.2
	1991	6.6	9.1	7.9	7.3	7.0	7.0	8.1
	1995	6.9	8.5	8.3	7.9	7.3	7.2	8.6
	1996	7.0	9.3	8.3	7.8	7.2	7.1	8.4
	1997	7.8	7.5	8.6	7.9	7.5	7.1	8.4
	1998	7.8	8.6	8.9	8.4	7.4	7.1	8.6
	1999 (P)	8.3	8.9	9.2	8.8	7.4	7.3	8.9
Total Fertility Rate (number of children per woman aged 15-49)	1981	...	1.88	1.62	1.68	1.57	1.58	1.83
	1986	...	1.79	1.59	1.53	1.38	1.60	1.83
	1991	1.44	1.86	1.59	1.55	1.65	1.67	1.97
	1995	1.28	1.79	1.52	1.51	1.61	1.67	1.95
	1996	1.30	1.73	1.52	1.46	1.60	1.61	1.89
	1997	1.27	1.63	1.45	1.43	1.52	1.53	1.81
	1998	1.21	1.56	1.42	1.45	1.47	1.53	1.81
Total First Marriage Rate (per 1,000) (males aged 17-49, females aged 15-49)	1981 M	653	701	686	660	546	692	722
	F	631	668	672	649	560	685	712
	1986 M	589	711	595	600	430	623	615
	F	580	742	631	626	442	658	660
	1991 M	600	727	575	581	381	610	600
	F	613	730	606	608	427	653	651
	1995 M	629	695	566	559	331	584	607
	F	649	734	592	594	370	618	657
	1996 M	607	747	586	581	327	579	582
	F	624	782	597	618	363	609	626
	1997 M	630	685	556	550	329	567	573
	F	653	718	583	587	362	597	611
Rate of Natural Increase (per 1,000)	1981	12.0	7.3	6.0	7.6	8.0	6.7	7.2
	1986	7.9	6.3	5.7	6.0	5.6	7.0	7.4
	1991	5.8	5.3	5.2	5.4	6.8	7.5	7.5
	1995	3.4	4.5	3.3	3.5	4.8	6.2	5.7
	1996	3.2	3.1	3.0	3.0	4.5	5.5	5.3
	1997	2.0	4.1	2.0	2.6	3.5	4.8	4.5
	1998	1.4	2.3	1.4	2.0	3.0	4.6	4.2
	1999 (P)	0.5	1.8	0.8	1.4	2.6	4.0	3.6
Total Growth Rate (per 1,000)	1981	-1.1	1.7	3.9	0.1	6.5	10.7	7.4
	1986	-2.8	1.1	4.8	1.7	9.1	18.3	6.3
	1991	2.1	0.9	5.5	4.8	7.1	12.2	3.6
	1995	-11.8	8.5	2.8	0.9	4.7	12.7	4.4
	1996	-12.2	7.4	3.9	1.6	4.2	12.2	3.9
	1997 (PD)	-13.2	2.4	2.6	1.0	3.2	13.1	0.8
	1998 (PR)	-12.8	3.2	1.6	-0.9	3.2	10.9	2.7
	1999 (PR)	-3.7	8.2	4.0	2.8	3.4	12.4	4.8

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1999 - Continued

	Year	Sask.	Alta.	B.C.	Yuk.	N.W.T.	Nvt.	Can.
Birth Rate (per 1,000)	1981	17.6	18.6	14.7	21.9	27.5[4]	...	15.0
	1986	17.0	18.1	14.0	19.5	27.6[4]	...	14.3
	1991	15.3	16.5	13.5	19.8	33.1[4]	...	14.4
	1995	13.3	14.2	12.4	15.2	21.1	29.5	12.9
	1996	13.1	13.6	11.9	13.9	19.4	29.4	12.3
	1997	12.6	13.0	11.3	14.8	17.4	28.7	11.6
	1998	12.5	13.1	10.8	13.0	18.4	29.5	11.3
	1999 (P)	12.4	12.8	10.4	12.2	18.3	28.8	11.0
Mortality Rate (per 1,000)	1981	7.7	5.6	7.0	5.8	4.1[4]	...	6.9
	1986	7.8	5.6	7.1	4.6	4.3[4]	...	7.1
	1991	8.1	5.6	7.1	4.0	4.8[4]	...	7.0
	1995	8.4	5.8	7.0	5.1	3.1	3.9	7.2
	1996	8.6	5.9	7.1	3.8	3.6	4.7	7.2
	1997	8.5	5.8	6.9	3.8	3.3	4.6	7.2
	1998	8.7	5.9	7.0	4.6	3.6	4.7	7.2
	1999 (P)	9.0	6.0	7.4	5.1	3.8	5.0	7.4
Total Fertility Rate (number of children per woman aged 15-49)	1981	2.12	1.87	1.64	2.06	2.86[4]	...	1.65
	1986	2.03	1.86	1.62	1.95	2.85[4]	...	1.60
	1991	2.04	1.90	1.69	2.15	2.47	3.55	1.71
	1995	1.91	1.79	1.61	1.82	2.34	3.41	1.66
	1996	1.89	1.74	1.55	1.67	2.25	3.37	1.62
	1997	1.83	1.68	1.48	1.82	2.02	3.36	1.55
	1998	1.82	1.71	1.45	1.60	1.97	2.98	1.54
Total First Marriage Rate (per 1,000) (males aged 17-49, females aged 15-49)	1981 M	710	644	684	693	457[4]	...	645
	F	698	689	695	715	474[4]	...	651
	1986 M	588	566	582	484	351[4]	...	558
	F	628	616	623	573	399[4]	...	589
	1991 M	622	597	601	470	284[4]	...	548
	F	656	643	661	521	311[4]	...	594
	1995 M	641	611	556	541	282[4]	...	524
	F	665	649	607	543	315[4]	...	563
	1996 M	628	569	521	453	268[4]	...	512
	F	653	613	563	486	282[4]	...	548
	1997 M	633	565	502	409	260[4]	...	505
	F	655	607	540	422	310[4]	...	539
Rate of Natural Increase (per 1,000)	1981	9.9	13.0	7.7	16.1	23.3[4]	...	8.1
	1986	9.2	12.5	6.9	14.9	23.3[4]	...	7.2
	1991	7.2	10.9	6.4	15.8	28.3[4]	...	7.4
	1995	4.9	8.4	5.4	10.1	18.0	25.6	5.7
	1996	4.5	7.7	4.8	10.2	15.8	24.7	5.2
	1997	4.1	7.2	4.3	11.0	14.1	24.1	4.4
	1998	3.8	7.2	3.8	8.4	14.8	24.8	4.1
	1999 (P)	3.4	6.8	3.1	7.0	14.5	23.8	3.6
Total Growth Rate (per 1,000)	1981	11.4	39.2	22.9	-22.7	37.0[4]	...	12.6
	1986	2.6	6.0	11.5	31.5	-1.7[4]	...	11.4
	1991	-1.2	15.9	25.3	41.4	38.9[4]	...	11.4
	1995	4.3	14.0	25.6	38.6	9.2	23.8	10.8
	1996	4.2	16.5	22.9	20.0	1.5	16.7	10.4
	1997 (PD)	2.7	21.5	15.6	-6.0	-5.5	13.1	9.8
	1998 (PR)	2.8	23.0	6.6	-26.4	-10.7	23.1	7.9
	1999 (PR)	-1.4	13.7	9.2	-11.4	14.9	20.8	8.3

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1999 - Continued

	Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.
Population Aged 65 + as a Percentage of the Total Population on July 1	1981	7.7	12.1	10.9	10.0	8.8	9.9	11.8
	1986	8.7	12.6	11.8	11.0	9.8	10.7	12.4
	1991	9.6	13.1	12.5	12.0	11.1	11.6	13.3
	1995	10.4	13.0	12.8	12.4	11.8	12.1	13.5
	1996	10.7	12.9	12.9	12.5	12.0	12.2	13.5
	1997 (PD)	11.0	12.9	13.0	12.7	12.2	12.3	13.6
	1998 (PR)	11.3	13.1	13.1	12.8	12.4	12.4	13.6
	1999 (PR)	11.5	13.1	13.2	12.9	12.6	12.5	13.6
Total Age Dependency Ratio on July 1 (in %)[1]	1981	78.2	76.0	67.0	69.5	55.9	58.9	67.7
	1986	68.1	68.6	61.1	62.5	52.2	55.0	64.0
	1991	59.7	67.3	59.1	59.7	53.5	55.5	65.5
	1995	55.1	64.5	57.9	57.0	54.2	57.0	65.5
	1996	54.3	63.5	57.7	56.5	54.2	57.4	65.2
	1997 (PD)	53.3	62.5	57.2	56.0	53.9	57.3	64.9
	1998 (PR)	52.5	61.9	56.6	55.3	53.5	57.1	64.5
	1999 (PR)	51.6	61.0	55.7	54.6	53.0	56.7	63.9
Life Expectancy at Birth (in years)[2]	1986 M	72.8	72.8	72.4	72.7	72.2	73.8	73.2
	F	79.2	...	79.5	80.1	79.7	80.0	79.9
	1991 M	73.7	73.2	73.7	74.2	73.8	75.0	74.6
	F	79.6	...	80.3	80.9	80.9	80.9	80.7
	1993 M	73.9	74.3	74.0	74.4	74.1	75.2	74.7
	F	79.9	...	80.4	80.7	81.0	81.0	80.9
	1994 M	73.9	...	74.4	74.4	74.1	75.4	74.7
	F	79.9	...	80.4	80.7	81.0	81.0	80.9
	1995 M	74.2	...	74.5	74.6	74.5	75.6	75.0
	F	80.2	81.1	80.6	81.0	81.0	81.1	80.6
	1996 M	74.4	...	74.8	74.8	74.6	75.9	75.1
	F	80.2	...	80.6	81.2	81.0	81.3	80.5
	1997 M (P)	74.5	...	75.0	75.2	74.9	76.3	75.5
	F (P)	80.0	...	80.6	81.2	81.2	81.5	80.6
Infant Mortality Rate (per 1,000)	1981	9.7	13.2	11.5	10.9	8.5	8.8	11.9
	1986	8.0	6.7	8.4	8.3	7.1	7.2	9.2
	1991	7.8	6.9	5.7	6.1	5.9	6.3	6.4
	1995	7.9	4.6	4.8	4.8	5.5	5.9	7.6
	1996	6.6	4.7	5.6	4.9	4.6	5.7	6.7
	1997	5.2	4.4	4.4	5.7	5.6	5.5	7.5
Rate of Pregnancies Terminated (per 100 births)[3]	1981	3.5	0.3	14.1	4.1	9.5	25.0	10.0
	1986	3.4	...	14.1	3.3	14.7	20.2	15.9
	1991	6.0	...	15.1	6.2	15.1	20.7	15.2
	1995	8.6	...	17.1	7.1	20.8	19.9	18.2
	1996	9.1	...	17.8	7.7	22.6	21.1	21.5
	1997	9.6	...	19.5	8.1	24.0	19.9	23.2
	1998	6.6	...	20.4	8.7	25.6	18.1	22.2

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1999 - Concluded

	Year	Sask.	Alta.	B.C.	Yuk.	N.W.T.	Nvt.	Can.
Population Aged 65 + as a Percentage of the Total Population on July 1	1981	11.9	7.2	10.7	3.3	3.0 [4]	...	9.6
	1986	12.6	8.0	11.9	3.7	2.9 [4]	...	10.5
	1991	14.1	9.0	12.7	3.9	3.1	1.9	11.5
	1995	14.5	9.6	12.6	4.3	3.4	2.2	12.0
	1996	14.5	9.8	12.5	4.4	3.5	2.1	12.1
	1997 (PD)	14.5	9.8	12.6	4.6	3.7	2.3	12.2
	1998 (PR)	14.5	9.9	12.8	4.9	3.9	2.4	12.3
	1999 (PR)	14.5	9.9	12.9	5.1	4.0	2.5	12.4
Total Age Dependency Ratio on July 1 (in %)[1]	1981	73.3	57.4	58.6	53.4	77.9 [4]	...	59.8
	1986	70.7	56.2	57.4	50.3	69.0 [4]	...	56.3
	1991	73.8	58.1	57.7	47.5	56.2	86.0	56.8
	1995	73.2	58.0	56.4	47.8	56.9	85.1	57.2
	1996	72.5	57.7	55.9	47.2	56.9	84.2	57.1
	1997 (PD)	71.6	57.1	55.5	47.4	56.7	85.5	56.8
	1998 (PR)	70.7	56.4	55.2	47.1	56.9	85.6	56.5
	1999 (PR)	69.6	55.6	54.6	46.8	57.1	85.6	55.9
Life Expectancy at Birth (in years)[2]	1986 M	73.8	73.7	74.4	...	...	...	73.3
	F	80.5	80.2	80.7	...	...	...	80.0
	1991 M	75.2	75.1	75.3	...	...	...	74.6
	F	81.5	81.2	81.4	...	...	...	81.0
	1993 M	75.5	75.4	75.5	...	...	...	74.9
	F	81.8	81.1	81.4	...	...	...	81.0
	1994 M	75.1	75.5	75.7	...	...	...	75.0
	F	81.8	81.1	81.4	...	...	...	81.0
	1995 M	75.1	75.6	75.9	...	...	...	75.2
	F	81.5	81.3	81.7	...	...	...	81.1
	1996 M	75.4	75.9	76.2	...	...	...	75.5
	F	81.4	81.3	81.8	...	...	...	81.2
	1997 M (P)	75.7	76.4	76.5	...	...	...	75.8
	F (P)	81.5	81.5	82.1	...	...	...	81.4
Infant Mortality Rate (per 1,000)	1981	11.8	10.6	10.2	14.9	21.5 [4]	...	9.6
	1986	9.0	9.0	8.5	24.8	6.6 [4]	...	7.9
	1991	8.2	6.7	6.5	10.6	4.3 [4]	...	6.4
	1995	9.1	7.0	6.0	12.8	9.2	17.6	6.1
	1996	8.4	6.2	5.1	—	4.9	19.9	5.6
	1997	8.9	4.8	4.7	8.4	6.9	14.8	5.5
Rate of Pregnancies Terminated (per 100 births)[3]	1981	9.5	15.8	30.8	20.9	10.8 [4]	...	17.5
	1986	5.5	14.4	27.3	22.8	12.1 [4]	...	17.0
	1991	8.1	14.9	23.7	27.5	17.7 [4]	...	17.4
	1995	13.5	17.0	21.4	27.7	14.9 [4]	...	19.0
	1996	13.6	15.8	24.3	38.1	16.2 [4]	...	20.3
	1997	14.0	17.3	24.9	28.3	16.8 [4]	...	20.5
	1998	13.9	16.1	23.9	35.3	16.3 [4]	...	19.8

[1] Ratio between population aged 0-17, 65+ and 18-64.
[2] Because of an absence of deaths in certain age groups, the mortality table could not be calculated.
[3] Practised in hospitals in Canada.
[4] Nunavut included.
(P) Preliminary.
(PD) Final postcensal estimates based on 1996, as of September 14, 2000.
(PR) Updated postcensal estimates based on 1996, as of September 14, 2000.
Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

ahead of Saskatchewan and Newfoundland. Although relatively weak compared to other Canadian provinces, this increase in migration remains the largest recorded in Quebec since 1995.

Again in 1999, Ontario received the largest number of immigrants. Fifty-five per cent of all immigrants arriving in Canada in 1999 settled in Ontario, which had a population of 11,577,200 inhabitants as of January 1, 2000, representing 38% of the national total. Ontario's attraction for immigrants is not new, since the percentage of immigrants choosing to live in this province has remained steady around at least 50%. This fact means that, as long as Canada continues to receive large numbers of immigrants, Ontario can count on relatively high demographic growth compared to the country as a whole, especially since the rate of natural increase for this province (4.0 per 1,000) is higher than the national average and its interprovincial migration balance is positive (16,600 persons in 1999). It should be noted that, in 1999, for the first time since 1987, Ontario registered the highest net interprovincial migration of all Canadian provinces.

Nunavut, the Northwest Territories and the Yukon

Nunavut which became officially a territory on April 1, 1999, continued to record strong demographic growth. Its population reached 27,300 persons on January 1, 2000. Even though it slowed slightly, the rate of growth was 20.8 per 1,000 in 1999. This growth is essentially the result of an estimated rate of natural increase of 23.8 per 1,000, by far the highest in Canada. Given its very young demographic structure (the territory had only 2.6% of persons aged 65 years or older as of January 1, 2000) and its high fertility rate, Nunavut should continue to post a relatively high rate of natural increase.

The Northwest Territories also experienced strong demographic growth in 1999 at 14.9 per 1,000, which resulted in an increase in the population to 41,600 inhabitants. As in the case of Nunavut, this growth is largely a reflection of a strong rate of natural increase associated with the relatively young demographic structure (in 1999, 4.1% of the population was aged 65 years and older). As for the Yukon, its population fell in 1999 to 30,700 residents, a drop of 11.4 per 1,000. This is the third consecutive year that the population of the Yukon has decreased owing to a negative migration balance, which has been unable to offset the surplus of births to deaths. It should also be noted that, of the three territories, the Yukon has the highest percentage of elderly persons (5.4%), despite the fact that its population is still quite young compared to the provinces.

DIVORCES

In 1998, there were 69,100 divorces registered in Canada. This represented a relatively small increase of 2.5% over 1997 (67,400 divorces), but it should be noted that this is the first increase since 1994 and the largest since 1992. Given the decline in the number of marriages and the increase in the average age at marriage, a drop in the number of divorces would have been the expected trend. However, in the past, there have been fluctuations in the number of divorces, followed by a return to lower numbers. In terms of the crude divorce rate, it rose from 22.5 per 1,000 inhabitants to 22.8 per 1,000 in 1998. This slight increase was the first since 1992.

Along with the increase in the number of divorces, there was also a small decline in the average duration of the marriage among persons divorced in the year from 10.9 years in 1997 to 10.8 years in 1998. Since the early 1970s, there has been a downward trend in this indicator, which has fallen 2.5 years over a 30-year period.

These data apply to the country as a whole and hide significant variations from province to province. The following section looks at these variations and is then followed by a discussion of the change in the total divorce rate in each province since 1980.

Provinces and Territories

Among the Atlantic provinces, only Nova Scotia posted a decline in the number of divorces. While there were 2,000 divorces in 1997, this figure fell slightly in 1998 to 1,900 (decline of 2.5%). This situation follows on the heels of a major decrease of 11% in 1997. Since 1993, the number of divorces in Nova Scotia has fallen 18.6%, the largest decline in Canada over this five-year period. However, as is shown in Table 2, Nova Scotia actually has the highest divorce rate of all of the Atlantic provinces (20.7 per 1,000). It certainly is not indicative of the Atlantic provinces as a whole. Newfoundland and Prince Edward Island experienced the greatest increase in the number of divorces in the country (15%). This situation is especially surprising for Newfoundland since it recorded the sharpest decline in 1997 (23%). Such annual variations are probably attributable more to administrative changes in the applicable courts than to changes in conjugal behaviour. Nevertheless, this province still has the lowest divorce rate in Canada at 17.3 per 1,000. Despite the fact that it is the lowest, Newfoundland's divorce rate has risen sharply from only 14.8 per 1,000 in 1997. In the case of Prince Edward Island, the province recorded the greatest relative increase in the number of divorces of all of the Canadian provinces for the second year in a row. It is important to note that,

Table 2. Crude Divorce Rate (for 10,000), Canada and Provinces, 1980 to 1998

Year	New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat-chewan	Alberta	British Columbia	Canada
1980	9.69	13.17	27.13	18.78	21.36	25.66	22.06	18.98	34.57	34.50	25.30
1981	9.90	15.11	26.74	18.89	29.31	24.60	23.15	19.80	36.69	33.76	27.26
1982	10.88	16.55	26.52	23.48	28.24	26.50	22.85	18.38	37.50	35.38	28.04
1983	12.27	17.14	26.92	27.15	26.30	25.52	24.90	19.96	36.64	32.17	27.03
1984	10.17	15.40	25.80	19.79	25.40	23.59	24.36	19.58	35.37	30.51	25.45
1985	9.68	16.68	26.40	18.79	23.72	22.43	21.37	18.79	33.72	28.01	23.98
1986	11.92	15.50	29.34	23.84	28.36	29.19	27.32	24.09	39.31	37.61	30.00
1987	19.42	21.39	30.88	27.41	32.58	40.53	35.73	28.74	39.15	39.95	36.37
1988	15.76	20.81	27.79	22.91	29.74	33.04	28.15	24.33	35.62	34.54	31.16
1989	17.44	19.06	27.96	22.43	28.62	30.96	26.39	24.14	33.00	33.32	29.68
1990	17.58	21.53	26.59	22.96	29.23	28.13	25.31	23.47	33.32	29.69	28.33
1991	15.74	20.64	24.92	22.16	28.70	26.56	25.14	22.34	32.35	30.73	27.48
1992	14.94	17.34	25.06	21.82	27.69	28.82	23.87	23.16	31.19	30.06	27.85
1993	16.03	17.15	25.72	21.43	27.44	27.04	23.12	22.24	32.25	30.49	27.25
1994	16.23	18.63	24.68	20.91	25.29	28.37	24.43	23.31	30.22	31.06	27.17
1995	17.29	19.29	24.73	19.37	27.80	26.77	23.70	22.88	27.74	27.37	26.45
1996	18.91	17.40	23.93	19.26	24.85	22.55	22.95	21.74	27.00	28.07	24.11
1997	14.84	17.76	21.22	18.20	23.93	21.00	23.10	21.51	25.32	24.48	22.48
1998	17.31	20.38	20.65	19.55	23.10	22.09	21.47	21.91	26.38	24.58	22.84

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

because of its small population, annual fluctuations can be large (300 divorces in 1998). Lastly, the number of divorces increased by 7% in New Brunswick, rising from 1,400 to 1,500 divorces between 1997 and 1998. This was the first increase in the number of divorces in this province since 1991.

While the Atlantic provinces have the lowest divorce rates, they also boast the longest average duration of the marriage of divorcees in Canada. Throughout the rest of the country, this duration is less than 11.0 years, while it is 12.7 years in Prince Edward Island—the highest of all Canadian provinces—12.1 years in Newfoundland, 11.6 in Nova Scotia and 11.4 years in New Brunswick. These figures represent increases over 1997, with the exception of New Brunswick.

Quebec has the second largest decrease in the number of divorces (-3.2%). Except for 1995, the number of divorces fell steadily in this province throughout the 1990s. While there were 20,500 divorces in 1990, there were fewer than 17,000 in 1998. However, Quebec has the third highest divorce rate in Canada at 23.1 per 1,000, a drop from 1997 (23.9 per 1,000). Another interesting fact is that Quebec had the shortest average duration of the marriage of persons divorced in that year. That duration was only 10.4 years, a drop of 0.3 years compared with 1997.

While Quebec experienced a drop in the number of divorces in 1998, the same did not hold true in Ontario. That province experienced an increase with the number of divorces, climbing from 23,600 to 25,100, up 6%. This increase was accompanied by a rise in the divorce rate from 21.0 per 1,000 in 1997 to 22.9 per 1,000 in 1998. The average duration of the marriage of persons divorced in the year remained stable at 10.9 years, a duration only slightly longer than that for the country as a whole (10.8 years).

As with the Atlantic provinces, there is heterogeneity among the Prairie provinces with respect to divorce. While Manitoba experienced the greatest drop in the number of divorces in Canada (-6.9%), Alberta posted an increase more than 2.5 times higher than the increase for the country as a whole (6.7% compared with 2.4% for Canada). The 2.2% rise in Saskatchewan closely reflects the national trend. There are equally pronounced differences between the Prairie provinces when comparing divorce rates. In Manitoba and Saskatchewan, the rate is lower than the Canadian average, 21.5 per 1,000 and 21.9 per 1,000 respectively (compared with 22.8 per 1,000 for the country as a whole). At the other end, ***Alberta had the highest divorce rate of all Canadian provinces for the second consecutive year, climbing from 24.5 per 1,000 in 1997 to 26.4 per 1,000 in 1998***.

After experiencing a steep drop in the number of divorces in 1997 (-11.1%), British Columbia posted a slight increase of 1.4% in 1998 (9,800 divorces compared to 9,700 in 1997). The divorce rate also remained relatively stable climbing from 24.5 per 1,000 to 24.6 per 1,000. This represents the second

highest rate among Canadian provinces. As for the average duration of the marriage of persons divorced, British Columbia is right in line with Canada with an average of 10.8 years.

It was in the Yukon and Northwest Territories that the greatest increase in the number of divorces occurred in 1998, at 15.8% and 17.7% respectively. In the case of the Territories, annual fluctuations are disproportionate to those in the provinces because of the small size of the population. As for the average duration of the marriage of persons divorced, it reflects the national average at 10.9 years in the Yukon and 10.7 years in the Northwest Territories.

Total Divorce Rate

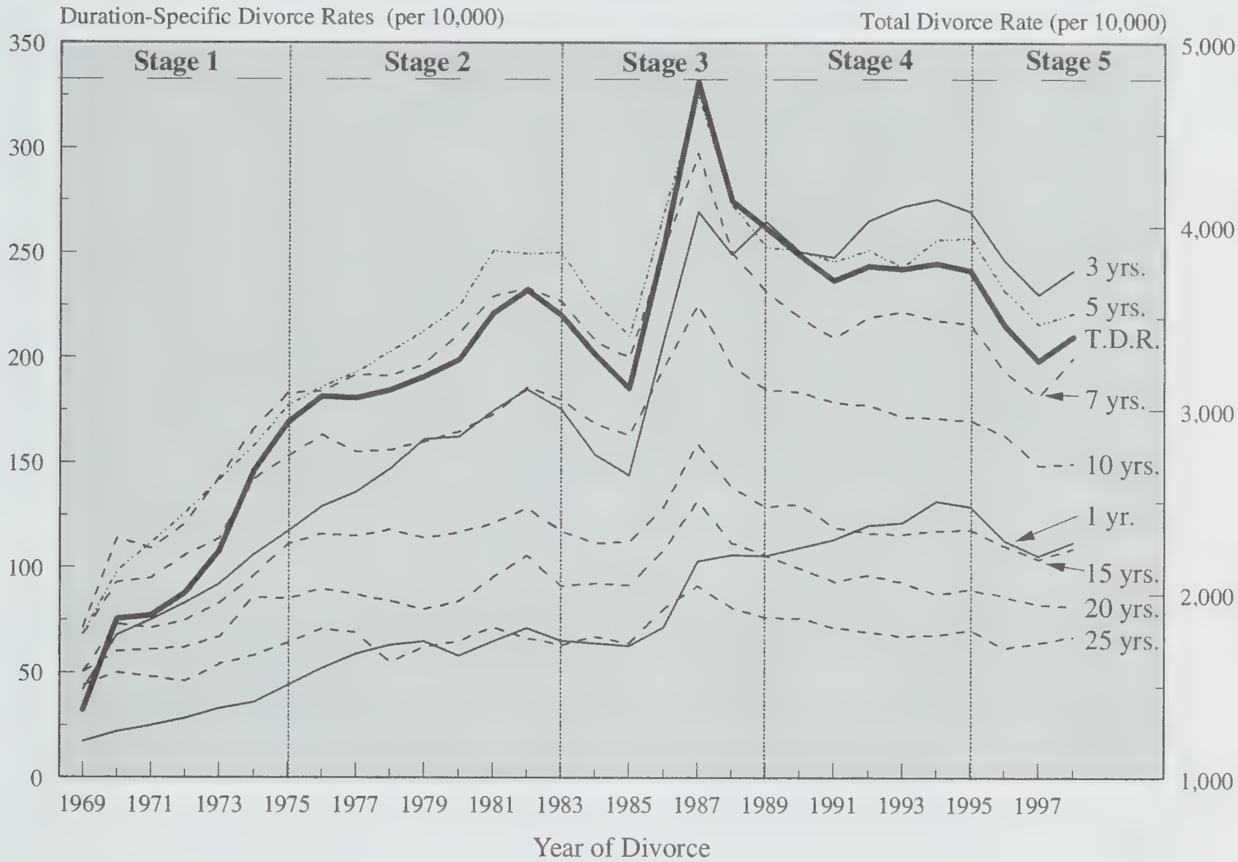
The total divorce rate is a cross-sectional measure (for one year) of the intensity of the phenomenon. It corresponds, for a given year, to the total of the divorce rates per duration of the marriage and represents the proportion of marriages of a fictitious cohort that would end in a divorce if the divorce rates were applied to these marriages at each duration.

Since the total divorce rate takes into consideration annual fluctuations in the number of marriages, it is more appropriate and easier to interpret than the crude divorce rate, which reports the number of divorces observed in a given year in the total population of the region studied. This aspect is particularly important since there are important differences in the types of conjugal relationships from province to province. For example, common law relationships are much more popular in Quebec than in the other Canadian provinces. All things being equal, therefore, one would expect Quebec to have fewer divorces per 1,000 inhabitants than in some other province where marriage is a more popular form of conjugal living. In reporting the number of divorces by the length of the marriages in the corresponding year, the divorce rates used to calculate the total rate allow for consideration of variations in marriage rates. This explains why Quebec, for example, has the third highest crude divorce rate but the highest total rate of all provinces. On the other hand, the total divorce rate may be biased upward in the case of provinces that have significant positive net migration because the rate attributes a certain number of divorces of persons who would have been married in another provinces to the marriages recorded in that province in years past. The total rate for provinces such as Ontario, Alberta and British Columbia, which all have strong demographic growth linked to migration, could therefore be overestimated.

Based on an estimate of the number of marriages in 1998,[2] ***the total divorce rate is estimated at 3,399 divorces per 10,000 marriages in 1998***. This means that if, for the next 25 years, the divorce rate by duration of the marriage

[2] The statistics on marriages for 1998 were not available at the time of this analysis. The estimate of the number of marriages for this year was obtained by applying the marriage rate for the previous year to the estimated population in mid 1998.

Figure 2. Duration-Specific Divorce Rates for Various Durations of Marriages, by Year of Divorce and Total Divorce Rate, Canada, 1969 to 1998



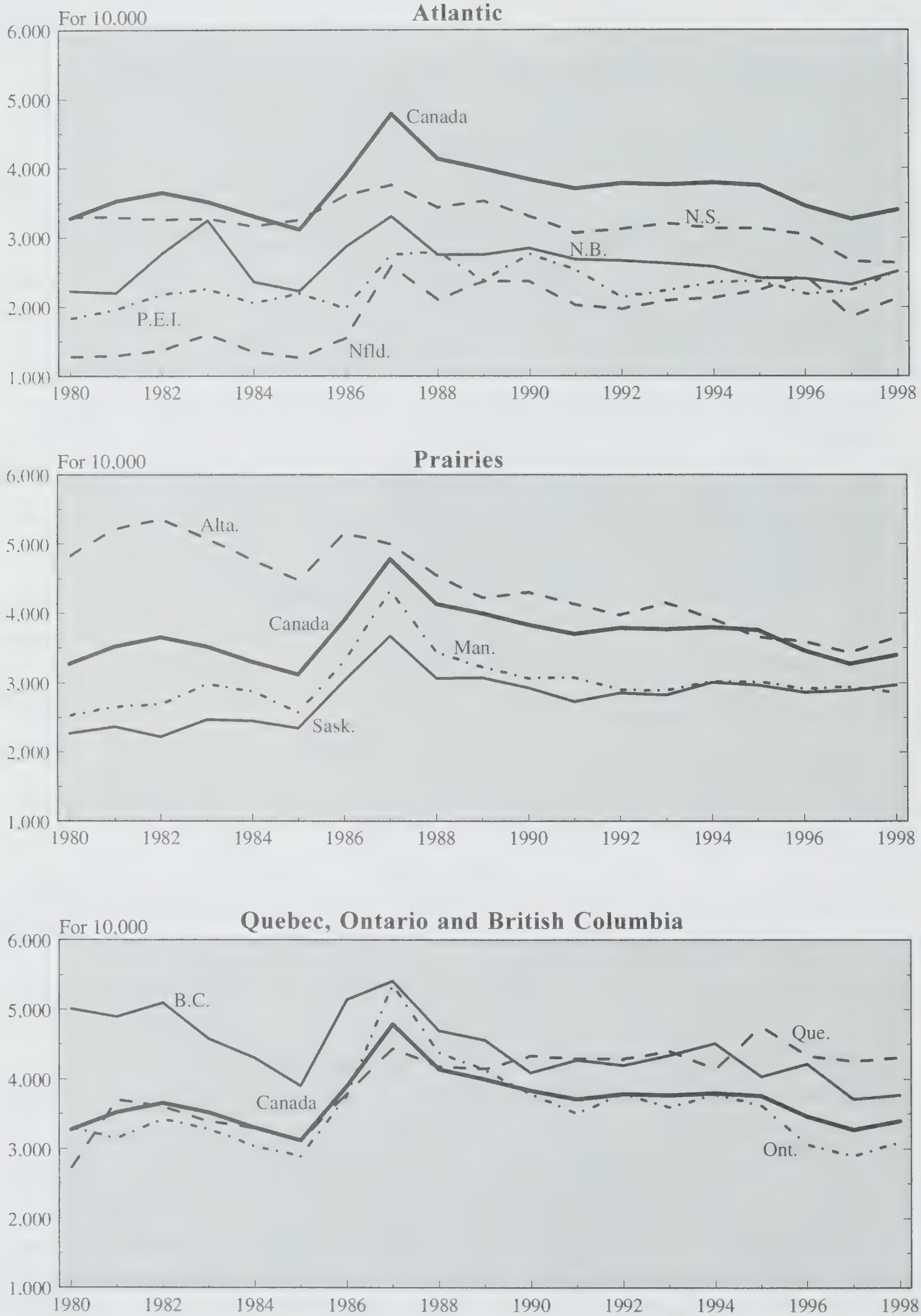
Note: Preliminary data for 1998.
Source: See Table A5, appendix.

corresponded to that observed in 1998, 34% of these marriages would end in divorce. This represents a 3.9% increase over the total rate of 3,270 divorces per 10,000 marriages in 1997. As Figure 2 shows, the rise in the total divorce rate is the result of a sharp increase in divorces of marriages lasting less than 20 years.

Change in the Total Divorce Rate by Province

Figure 3 shows the change in the total divorce rate since 1980 in the various provinces. The first thing that is apparent is that the rate varies from province to province, but that the differences tend to even out over the years, at least until 1990. For example, while the highest total divorce rate was 4.0 times greater than the lowest in 1981 (ranging from 1,297 divorces per 10,000 marriages in Newfoundland to 5,220 divorces per 10,000 marriages in Alberta), the ratio was only 1.8 in 1990 (ranging from 2,368 divorces per 10,000 marriages in Newfoundland to 4,336 divorces per 10,000 marriages in Quebec). Since then, this ratio has remained relatively stable settling at 2.0 in 1998.

Figure 3. Total Divorce Rate, Canada and Regions, 1980-1998



Note: Preliminary data for 1998.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Since 1980, three provinces—Alberta, British Columbia and Quebec—have exchanged the top three ranks among provinces with respect to the total divorce rate. At the other end, Newfoundland, Prince Edward Island and New Brunswick have continuously posted the lowest rates. With the exception of 1996, Newfoundland has always had the lowest total divorce rate of all provinces. However, the province with the highest rate has changed several times. Alberta began by registering the highest divorce rate most often until 1986, when British Columbia took over at the end of the 1980s. Since 1990, Quebec has posted the highest total divorce rate in the country every year, except in 1994.

Figure 3 shows that, in the Atlantic provinces, the total divorce rate tends to be increasingly similar from province to province, while remaining below the national average. Although the highest rate in 1980 (Nova Scotia at 3,300 divorces per 10,000 marriages) was 2.6 times higher than the lowest rate (Newfoundland at 1,283 divorces per 10,000 marriages), this difference was only 1.2 in 1998. It is also evident that, since the late 1980s, the total divorce rate has remained relatively stable in all of the Atlantic provinces, except in Nova Scotia where the rate continues to drop, nearing the value observed in the other three provinces.

As was the case with the Atlantic provinces, the Prairies also show a trend to homogeneity in terms of the divorce rate. While the ratio between the highest rate (Alberta) and the lowest (Saskatchewan) in the region was 2.1 in 1980, it was only 1.3 in 1998. Since 1980, the greatest variations in the total divorce rate have been in Alberta where the rate fell from 4,826 divorces per 10,000 marriages to 3,656 divorces per 10,000 marriages between 1980 and 1998. For their part, Saskatchewan and Manitoba have retained some stability in their total divorce rates since the nineties (around 3,000 divorces per 10,000 marriages).

The last section of Figure 3 contains the graphs showing the change in the rate for the three most-populated provinces. Here again, there is some convergence. Most importantly, there has been a reversal in the ranking of these three provinces. In 1980, Quebec had the lowest rate (2,710 divorces per 10,000 marriages) of these three provinces and British Columbia the highest (5,013 divorces per 10,000 marriages). While Quebec's total divorce rate during this period was climbing to the point where in 1998 it had the highest total divorce rate in Canada (4,310 divorces per 10,000 marriages), the rate in British Columbia has fallen. In Ontario, the rate fluctuated significantly during this period, but in 1998 returned more or less to the same level as in 1980 (around 3,000 divorces per 10,000 marriages).

Conclusion

The various measures of divorce rates show a slight increase in the phenomenon in Canada as a whole. This is a trend that has not been seen

since 1992. Since annual fluctuations in the number of divorces may be related to the ways in which the courts operate, caution should be exercised in interpreting this upward movement as a true increase in the divorce rate in Canada. It will therefore be interesting to observe this phenomenon over the next few years. Further, despite the existence of quite significant provincial disparities, there is a trend toward homogeneity of behaviour toward divorce throughout the country.

BIRTHS AND FERTILITY

In 1998, for the eighth consecutive year, the number of births in Canada fell. There were actually 342,400 births, which represents a decline of 1.8% over the number recorded in 1997. Although the birth rate continued to fall in 1998, there was a slowdown in the rate of decline, the number of births having dropped by 4.8% in the previous year. Combined with the continued population growth, ***this decrease in number of births translated into a new drop in the crude birth rate, which fell from 11.6 per 1,000 to 11.4 per 1,000. The total fertility rate also fell in 1998, but very slightly, dropping from 1.55 children per woman in 1997 to 1.54 children per woman in 1998***. This is the lowest level ever recorded for this indicator for the country as a whole. The drop in the birth and fertility rates is occurring, with a few exceptions, in all provinces. ***Newfoundland still has the lowest fertility rate in the country at 1.21 children per woman***. Saskatchewan, with a rate of 1.82 children per woman, has the highest rate of all provinces.

The number of births fell everywhere except in Alberta where there were 1,000 more births than in 1997, an increase of 2.7%. At the other end of the scale, ***Newfoundland, with the lowest fertility rate in the country, saw its number of births fall by 7.8% in 1998, the largest relative decline in number of births***. Prince Edward Island, Quebec and Nova Scotia had relative drops of 5.5%, 4.9% and 3.6% respectively. Among the Atlantic provinces, New Brunswick was the only one where there was some stability in the birth rate with the number of births falling only 0.5%. Similar situations exist in Ontario (drop of 0.3%) and in Saskatchewan (drop of 0.6%). However, the number of births fell 3.4% in British Columbia.

There are two reasons for the very rapid decrease in the number of births: one is structural and the other is related to behavioural change. The first is related to the drop in the fertility rate that began in the mid-sixties reducing the population in the generations that are now attaining the age groups of highest reproduction. Under these conditions, the number of births declines even if the fertility rate remains stable. The second reason is related to the decline in the total fertility rate. Even if slight, a drop in the fertility rate amplifies the structural effect and leads to the situation observed for the past few years where there has been a continuous and rapid decrease in the number of births. If we look at both the change in the number of births and the change in the total fertility rate in New Brunswick in 1998, we can clearly see the structural impact of the ageing of the population on birth rate. Despite an increase in the fertility rate and an increase in the total population of this province, there has been a slight decline in the number of births because there are fewer women at peak childbearing ages.

Only two provinces had a higher total fertility rate in 1998 than in 1997. The greatest increase was in Alberta where the total fertility rate rose from 1.68 children per woman in 1997 to 1.71 children per woman in 1998, an increase of 1.3%. Virtually the same trend was observed in New Brunswick where the rate rose from 1.43 to 1.45 children per woman, up 1.1%.

The total fertility rate remained unchanged in Ontario (1.53 children per woman) and in Manitoba (1.81 children per woman). The rate was also relatively stable in Saskatchewan (-0.9%), while slight decreases occurred in Nova Scotia (-2.2%) and British Columbia (-2.4%). As with number of births, the drop in the total fertility rate was higher in Prince Edward Island (-4.5%), Newfoundland (-4.3%) and Quebec (-3.1%). Thus, it was in the provinces with the lowest fertility rate that the most significant decreases were recorded. Prince Edward Island is the exception in that, while the fertility rate fell in 1998, its total fertility rate was the fourth highest in Canada in 1997.

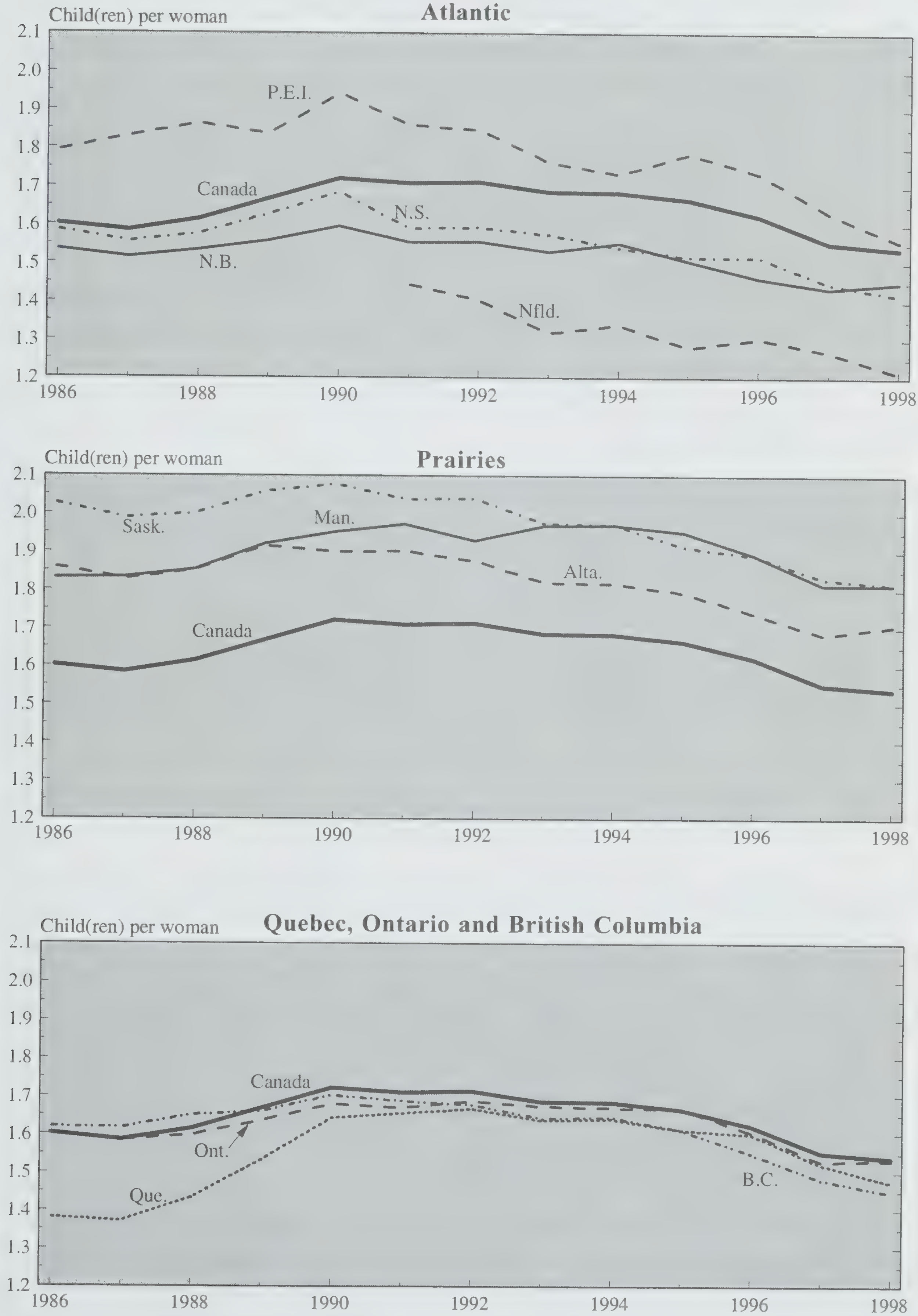
Recent Change in the Total Fertility Rate of the Provinces: 1986-1998

At 1.54 children per woman in 1998, Canada's total fertility rate has never been lower, but a majority of provinces have even lower rates. Newfoundland, with a rate of 1.21 children per woman, has an extremely low fertility level; indeed the lowest ever recorded in Canada. Two other Atlantic provinces—New Brunswick and Nova Scotia—also have very low rates at 1.45 and 1.42 children per woman respectively. In the case of Prince Edward Island, its rate of 1.56 children per woman appears to be very close to the rate for Canada as a whole. However, if we take a closer look at the trend since 1986, it is evident that this province has experienced the sharpest drop, falling from 1.79 to 1.56 children per woman (Figure 4). Although Prince Edward Island had a total fertility rate significantly higher than the rest of the country in 1986, some twelve years later it reflects the national average.

Except in Newfoundland—the province with the lowest total fertility rate in Canada throughout the 1990s—there has been a narrowing of the gap in fertility behaviour among the Atlantic provinces. This phenomenon is not unlike what was noted with respect to the total divorce rate. With both the divorce and fertility rates, the behaviour of the Atlantic provinces is becoming increasingly homogeneous, while remaining below the national average.

The Prairies traditionally have total fertility rates higher than the Canadian average. Alberta, with 1.71 children per woman in 1998, is in a similar situation to that of Canada in the early 1990s. Manitoba and Saskatchewan are maintaining slightly higher rates at 1.8 children per woman, a level that Canada as a whole has not achieved in two decades. This phenomenon is explained in part by the higher fertility rate of Aboriginal peoples who are relatively more numerous in these provinces than elsewhere in the country. The second section of Figure 4 shows that, since 1986, the total fertility rate in the Prairies, as in the Atlantic

Figure 4. Total Fertility Rate, Canada and Regions, 1986-1998



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section, Demography Division, Population Estimates Section.

provinces, has been moving toward the level observed for Canada as a whole, even though for each of these provinces, it has always remained higher. Saskatchewan had the highest total fertility rate in Canada between 1986 and 1993, when it was around 2.0 children per woman. Since 1993, none of the provinces has achieved a rate above 2.0 children per woman.

The change in the fertility rate in the three most populated provinces (Ontario, Quebec and British Columbia) is presented in the third section of Figure 4. Here too there is a trend toward homogeneity in reproductive behaviour although, in the case of Ontario and British Columbia, this behaviour was very similar to that of the Canadian population as a whole as early as 1986. The fertility rate at that time among Quebec women was, however, much lower than that of other Canadian women. Over the years, the gap between the fertility rate of Quebec women and that of other Canadian women has narrowed to the point where, since 1996, Quebec's total fertility rate has surpassed that of British Columbia.

It should also be noted that Quebec is the only province where the total fertility rate was higher in 1998 than in 1986. Of course, Quebec's rate was very low in 1986 and the turnaround took place mainly between 1987 and 1990. Further, only the Prairie provinces have total fertility rates that are significantly higher than the Canadian average. Not only do these three provinces have higher total rates, but the 1998 statistics reveal that, rather than moving toward the average, they are moving slightly farther away. This phenomenon is in direct contrast to the trend toward homogeneity observed in the other provinces.

Fertility Rate by Birth Order by Age of the Mother

Over the past few decades, the drop in the fertility rate has been accompanied by a shift in the fertility schedule. Therefore, it is important to take a closer look at the change in the fertility rate by birth order and by age. Fertility rates by birth order by age of the mother are determined, for each age group, by relating the number of births of each order to the total number of women in the age group in question. For each age group, the denominator therefore remains the same for all of the birth orders. This results in a distribution of births by order and by age of the mother expressed in the form of a rate. This computation adds a further dimension to the analysis of the change in intensity and in the fertility schedule.

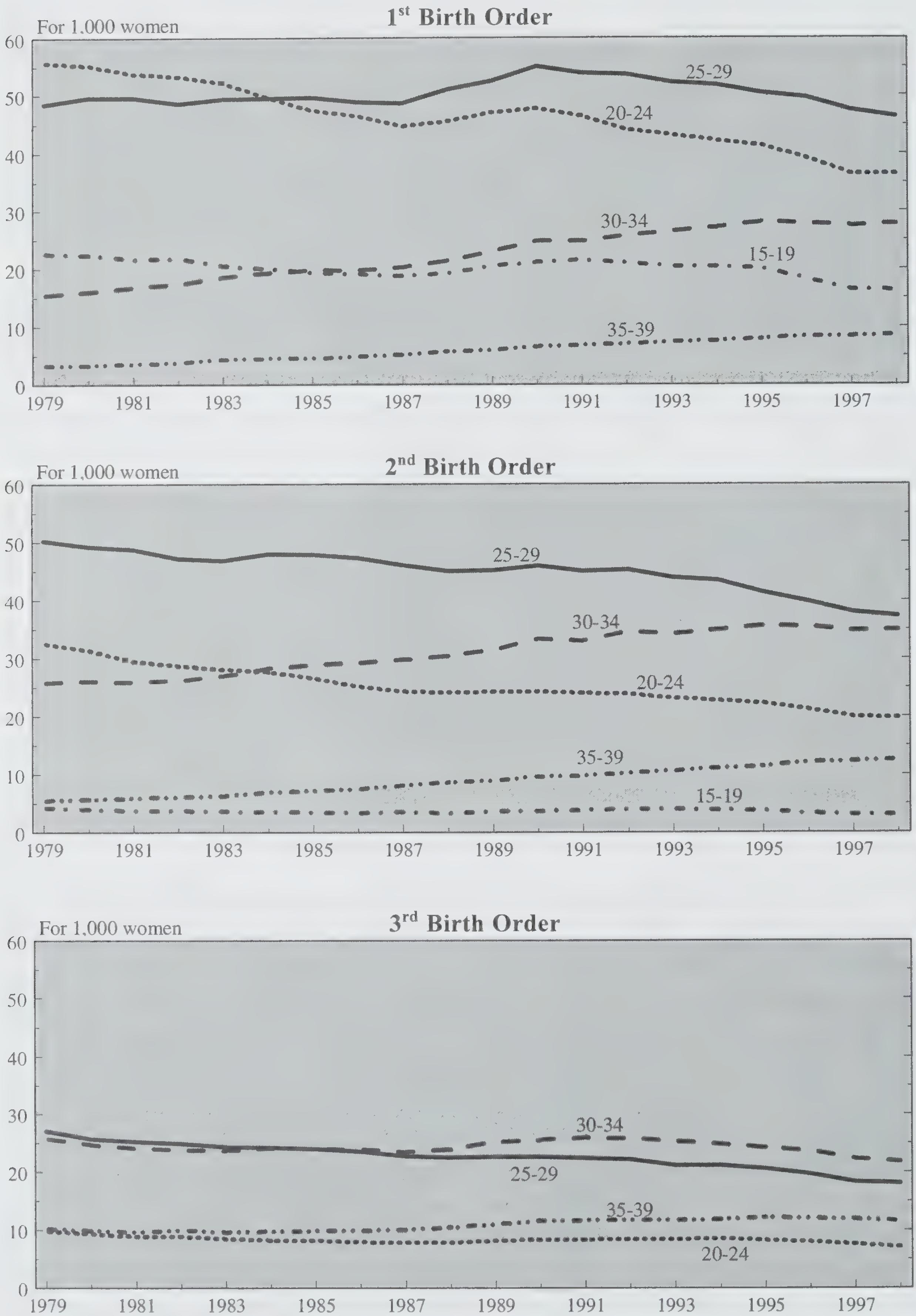
Between 1979 and 1998, the total first birth fertility rate fell by about 6% but this slight decline hides significant variations in the fertility schedule of nulliparous women. ***The drop*** in first birth fertility ***was especially steep among young women aged 15-19 years and 20-24 years for whom the rate fell 28% and 35% respectively over the whole period*** (Figure 5). Compared to their younger cohorts, the fertility rate of nonparous women aged 25-29

years changed only slightly over the period, falling only 5%. The drop in the first birth fertility rate of women aged 20-24 years was so pronounced that, since 1985, more women have given birth to their first child when they were 25-29 years than when they were 20-24 years. First birth fertility increased among women more than 35 years old and, while the rates remain low, since 1985 they have been higher than those of women aged 15-19 years. There has, therefore, been a postponement of the birth of the first child to an increasing older age, which is reflected in the increase in the average age of first-time mothers. This figure climbed from 24.9 years in 1979 to 26.8 years in 1998.

Of course, delaying the birth of the first child has an impact on the age at which women give birth to their second child. Between 1979 and 1998, the fertility rate of primiparous women, that is those who have already had a child, fell 8% (according to the total second birth fertility rate). As with the first birth, we see a significant ageing of the fertility schedule of women who already have one child. Although across the entire period, the second birth fertility rate always peaked among women aged 25-29 years, that rate nevertheless fell 26% between 1979 and 1998 (Figure 5). Further, the fertility rate of women aged 20-24 years with one child also fell considerably, dropping from 32.5 per 1,000 in 1979 to 19.7 per 1,000 in 1998. In contrast, the second birth fertility rate rose 35% among women aged 30-34 years. There was such an opposite evolution in the fertility rates of women aged 25-29 years and 30-34 years over the period that the difference in rates between the two groups, which was twice as high for the younger age group in 1979, had almost completely disappeared by 1998 (Figure 5). For women aged 35-39 years, the second birth fertility rate more than doubled and in 1998 was almost the same as that of women aged 20-24 years. The average age of mothers at the birth of their second child rose from 27.4 years to 29.3 years.

Beyond the second child, the fertility rate drops dramatically and the birth of a third child is now a rare event. Nevertheless, there has been a similar evolution in the fertility rates relating to the third child and subsequent children as the first and second child (Figure 5). Since 1979, the total third child fertility rate has fallen by 20%, that of the fourth child by 15 %, and that of the fifth and subsequent child by 20%. The decline is first and foremost the result of a pronounced drop in fertility among women aged 15-19 years. Among women aged 30-34 years, there has been a 15% decrease in the fertility rate for the third and subsequent child. Among those women aged 35-39 years, this rate rose 14%, but in absolute values, this increase is negligible, the rate climbing from 10.2 per 1,000 to 11.6 per 1,000. Although for the older age groups there has been greater stability, even a slight increase, in fertility rates for the third and subsequent child, these increases have been only marginal and unable to offset the drop among women younger than 30 years. Overall, fertility related to the third and subsequent births fell 19% between 1979 and 1998.

Figure 5. Fertility Rates by Age Group for Certain Birth Orders, Canada, 1979-1998



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section, Demography Division, Population Estimates Section.

Lifetime Fertility and Total Fertility Rate

Because of its many advantages, the total fertility rate is the indicator used most often to measure the evolution of fertility. In particular, unlike other less refined indicators, such as the crude birth rate or simply the number of births registered in a given year, the total fertility rate, given the way in which it is calculated, makes it possible to control variations in the size and in the structure by age of the population. It therefore allows for comparisons of fertility over time and region. Another advantage of the total fertility rate is that it is available quickly, given that it is based on the statistics of a single year. In this regard, it is a cross-sectional measure of fertility obtained by adding the fertility rates by age for a given year, thereby encompassing several generations of women.

This advantage is also the main disadvantage of this indicator since it can be influenced by a change in the fertility schedule. The alternative is a longitudinal measure, the lifetime (or completed) fertility rate, which is the sum of the fertility rates for the whole of the reproductive period of a single generation. This measure represents the average number of children that a single generation of women had. However, the rate can only be determined by waiting until the generation of women in question completes its reproductive period.

Figure 6 compares the evolution in the total fertility rate to that of the completed fertility rate over a long period. To make the comparison easier, the line representing the final fertility rate is shifted 28 years, which corresponds more or less to the average age at maternity.[3] In addition, the fertility rates have been extrapolated for generations aged 30 years and older in 1998, the last year for which we have fertility rates by age.

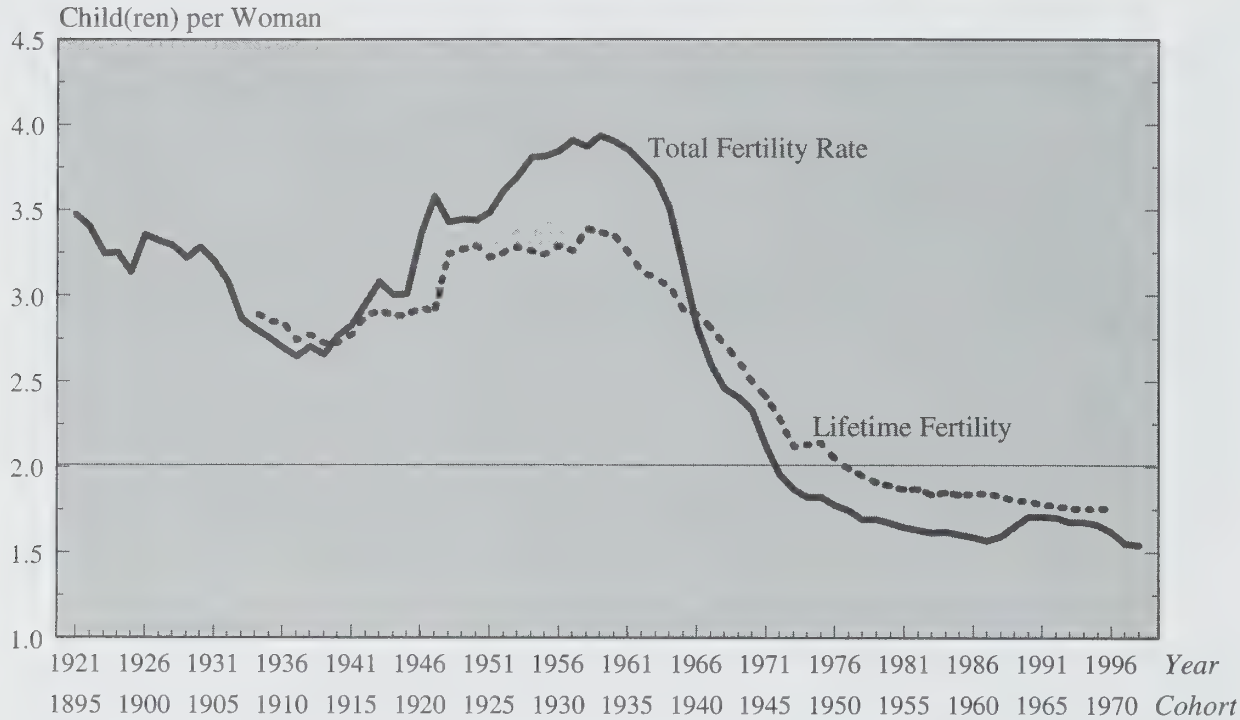
The figure shows the phenomenal growth in postwar fertility that was the origin of the baby boomers, the most numerous generations ever in Canada. It also shows a certain parallelism emerging in the two lines since, if there was no shift in the fertility schedule, these lines should converge and over the long term, the area under the two lines would necessarily be the same. Thus, it was during the baby boom period, while average age at maternity was dropping, that the two indicators were least alike. The total fertility rate was higher than 3.5 children per woman every year between 1952 and 1965, although no generation actually achieved that level, despite several coming close.

In contrast, for the most recent period, the total fertility rate fell more than the longitudinal indicator, reaching 1.54 children per woman in 1998. This is the first generation ever to record such a low completed fertility rate. Even if the fertility rates beyond 30 years were extrapolated for women born in 1968, there would appear to be a completed fertility rate of 1.8 children, a

---

[3] The average age at maternity was about 29 years at the start of the baby boom period. It fell to 26.7 years in 1975 and rebounded again to 28.5 years in 1997.

Figure 6. Total Fertility Rate, 1921-1998 and Lifetime Fertility 1895-1970, Canada



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section, Demography Division, Population Estimates Section.

rate 17% higher than the total fertility rate. It should be noted, however, that the lifetime fertility rate still appears to be on a downward trend even in the most recent generations, while the total fertility rate for corresponding years had stabilized around 1.6 children per woman until very recently.

The decline in fertility from the mid-sixties to late 1970s was spectacular. The total fertility rate fell from 3.2 children per woman in 1965 to 1.7 children per woman in 1980, passing in 1971 the level of 2.1 children per woman needed to ensure replacement of the generations. After this period, the rate stabilized around 1.65 children per woman until the late 1980s when there was a very slight increase (1.71 in 1991). Most recently, the rate began to fall again dropping to 1.62 children per woman in 1996 and to 1.54 children per woman in 1998. It is interesting to note that the most numerous generations ever in Canada were also the ones that were the least productive. By a strange reversal of events, the initial generations of baby boomers were also among the first to experience a fertility rate so low that it did not ensure their replacement.

Conclusion

Fertility has reached a level never before seen in Canada. There are still differences from province to province, although those differences are narrowing

over time. Newfoundland continues to have a particularly low fertility rate, while the Prairies have the highest rate. The completed fertility rate may never reach levels as low as those of the indicators for a given time (total fertility rate). They may nevertheless come close. Although there has been a postponement of childbearing, this phenomenon has yet to translate into a large enough increase in fertility rates at the older ages to offset the drop in fertility observed among the younger ages.

Several developed countries have fertility rates below that of Canada, but some also have higher rates. The United States is unique with its fertility rate of 2.06 children per woman, which is almost at the replacement rate. In the United Kingdom (1.71), France (1.71) and Australia (1.78), fertility is slightly higher than the rates recently recorded in Canada. They are, in fact, at the levels observed in this country between 1989 and 1995. The Netherlands (1.57) and Sweden (1.52) both have fertility rates comparable to Canada's rates. However, the total fertility rate is at very low levels in several western countries. For example, in 1997, this rate was 1.36 children per woman in Germany, 1.15 in Spain and 1.22 in Italy (Monnier, 1998). In the case of the last two countries, it is possible that this very low fertility rate reflects changes in the schedule (a drop in fertility at older ages at the same time as a drop in fertility at the younger ages) since, for a long time, fertility in southern Europe has been higher. Lastly, it should be noted that these national averages, as is the case with Canada, hide even lower levels in some major regions, such as the rate of 0.77 children per woman in East Germany in 1994, a rate that is climbing slowly but which still had not achieved 1.0 children per woman in 1996.

MORTALITY

Between the publication of the last Report on the Demographic Situation and the current one, no new statistics on deaths have been released. It is therefore not possible to analyse the latest trends in this field, as is traditionally done for the various components of demographic change in the first part of the Report. The recurring tables usually published in the section on mortality are reprinted in the appendix (Tables A8 and A9). The reader is invited to consult the 1998-1999 Report for the related comments. By way of compensation, the second part of this year's report contains an original analysis of the evolution of mortality among persons aged 60 and over, according to the associated causes of death.

INTERNATIONAL IMMIGRATION

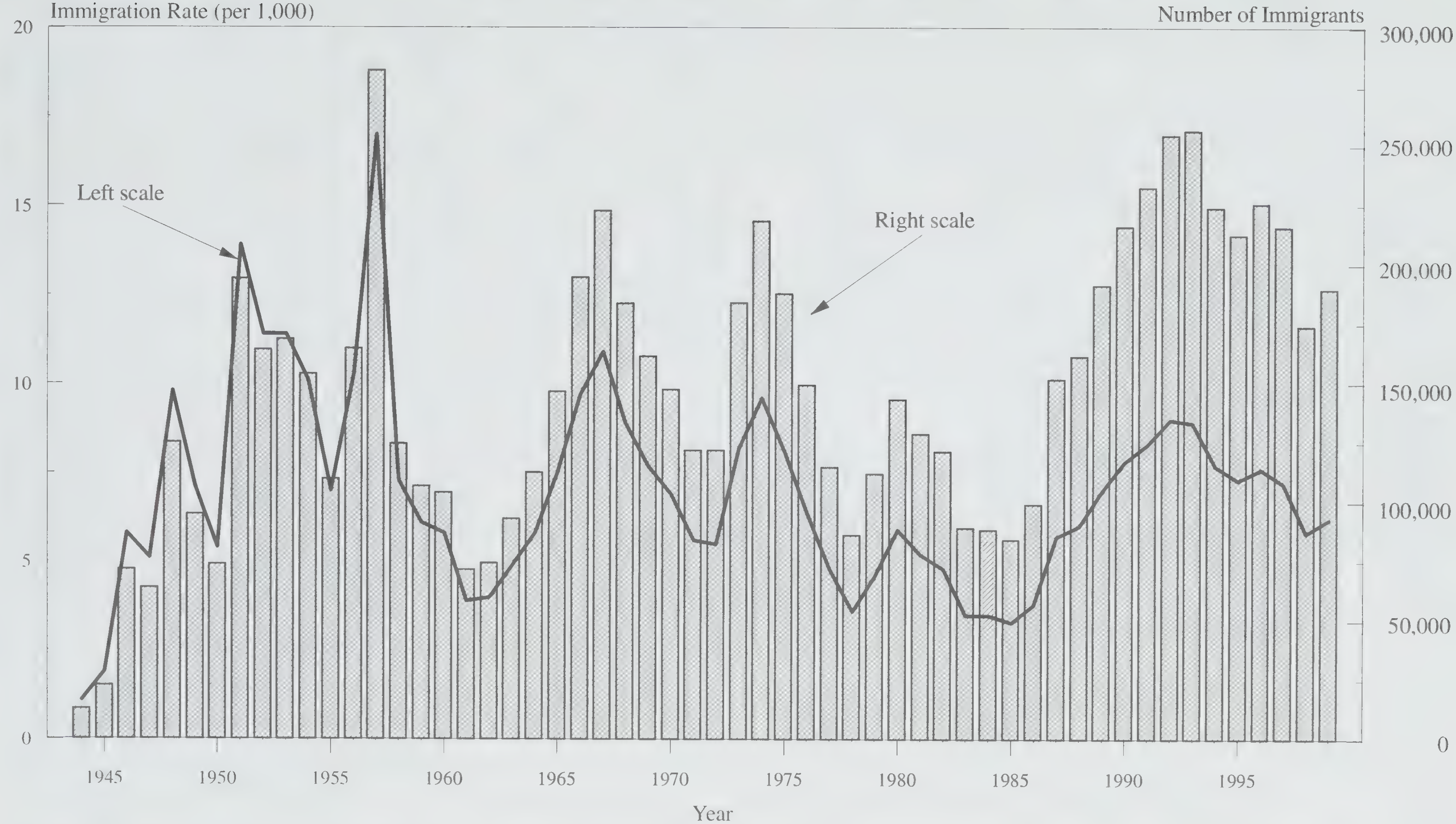
International immigration is a growing phenomenon worldwide. In 1999, the United Nations Population Fund (UNFPA) estimated that 125 million people were living outside their country of origin. In the past twenty years, 3.5 million immigrants have settled in Canada, and the 1996 Census showed that 4.9 million people in Canada, or 18% of the population, were born abroad. Proportionally speaking, Canada is one of the countries that receives the most permanent immigrants.

In 1999, Canada admitted 190,000 immigrants, a number comparable to 1989, at the start of the last wave of immigration (Figure 7). ***This is a substantial increase from the previous year, with nearly 16,000 (9%) more immigrants than were admitted in 1998***. The rate of international immigration was also up, at 6.2 per 1,000.

It should be noted, however, that the 174,200 immigrants admitted in 1998 represented a low point in recent trends in Canadian immigration. Since 1990, Canada has granted immigrant status to more than 200,000 persons per year, with peaks exceeding 250,000 in 1992 and 1993. These relatively high immigration levels were equal to or greater than the levels set out in the annual plans established for each of those years. On the other hand, the increase in immigration observed in 1999 is not sufficient to meet the objectives set out in the Immigration Plan for 1999, since just over 22,000 more immigrants would be required in order to reach the average level of 212,500 set out in the plan (Table 3). It was primarily with respect to the economic class that the Plan's objectives were unmet. The number of economic-class immigrants fell approximately 19,000 short of the figure set out in the Plan. As to the number of immigrants admitted under the family reunification policy (family class) or humanitarian aid (refugees), the objectives of the Immigration Plan were achieved, since in both cases the number of immigrants admitted—55,300 and 24,400 respectively—fell within the range of the target levels. Thus, while 1999 showed considerable improvement, the years 1998 and 1999 stand out from the previous years by the fact that for each of those years, the planned levels were not reached.

All classes of immigrants (except the "other" class, which is in any event relatively small) saw an increase in their numbers between 1998 and 1999. The increase was roughly of the same magnitude for the three main immigrant classes as for the whole. ***The largest increase was for economic immigrants, whose numbers reached 105,500, an increase of 10,500 (11%) from the previous year***. Under the family component of the immigration policy, the number of immigrants admitted reached 55,300, an increase of about 4,400

Figure 7. Number of Immigrants and Immigration Rate, Canada, 1944-1999



Sources: Employment and Immigration Canada, ***Immigration Statistics*** and after 1980, Citizenship and Immigration Canada, unpublished data.

Table 3. Number of Observed Immigrants and Number Planned by Class According to the Immigration Plan, Canada, 1999

Class	Number Planned	Observed Number		
		Number	Difference[2]	
			Number	Percentage
Family	53,500 - 58,300	55,255	-645	-1.2
Economic	117,900 - 130,900	105,444	-18,956	-15.2
Other[1]	6,500	4,831	-1,669	-25.7
Total immigrants	177,900 - 195,700	165,530	-21,270	-11.4
Total refugees	22,100 - 29,300	24,376	-1,324	-5.2
Total	200,000 - 225,000	189,906	-22,594	-10.6

[1] Includes live-in caregivers, special categories and provincial/territorial nominees.
[2] The difference is calculated using the average number planned for each class.
Source: Citizenship and Immigration Canada, ***Canada - A Welcoming Land: 1999 Annual Immigration Plan***, catalogue no. Ci1-1999.

(8%). Lastly, Canada admitted 1,700 more refugees in 1999 than in 1998, an increase of 7%, bringing their number to 24,400.

Hence the percentage distribution of immigrants by class changed very little. ***Economic immigrants still accounted for just over 55% of the total. Following them were those admitted according to the criteria of the family component of the policy and refugees, who accounted for roughly a third and 13% of the total respectively***. While this distribution by immigrant class has remained relatively stable since 1996, it contrasts with the pattern during the 1980s and the early 1990s, when the family class and, to a lesser extent, the refugee class represented a larger share of the whole than at present.

Over the past twenty years, this was only the fourth time that the number of economic immigrants passed the 100,000 mark. In 1980, fewer than 50,000 were admitted, and they represented only 32% of all immigrants. Changes were made to the immigration policy, partly with a view to attracting more economic immigrants, and their numbers began increasing substantially starting in 1987. Ten years later (in 1997), there were 125,500 economic immigrants, the highest number in two decades. Since the early 1980s, Canada has admitted more than 1.5 million immigrants under the economic component of the policy (Table 4).

Origin of Immigrants

The immigrant population has widely varying origins. According to data from Citizenship and Immigration Canada, immigrants admitted in 1999 came from 213 countries or independent states. Over time, this diversity has

Table 4. Immigrants to Canada by Class, 1980-1999

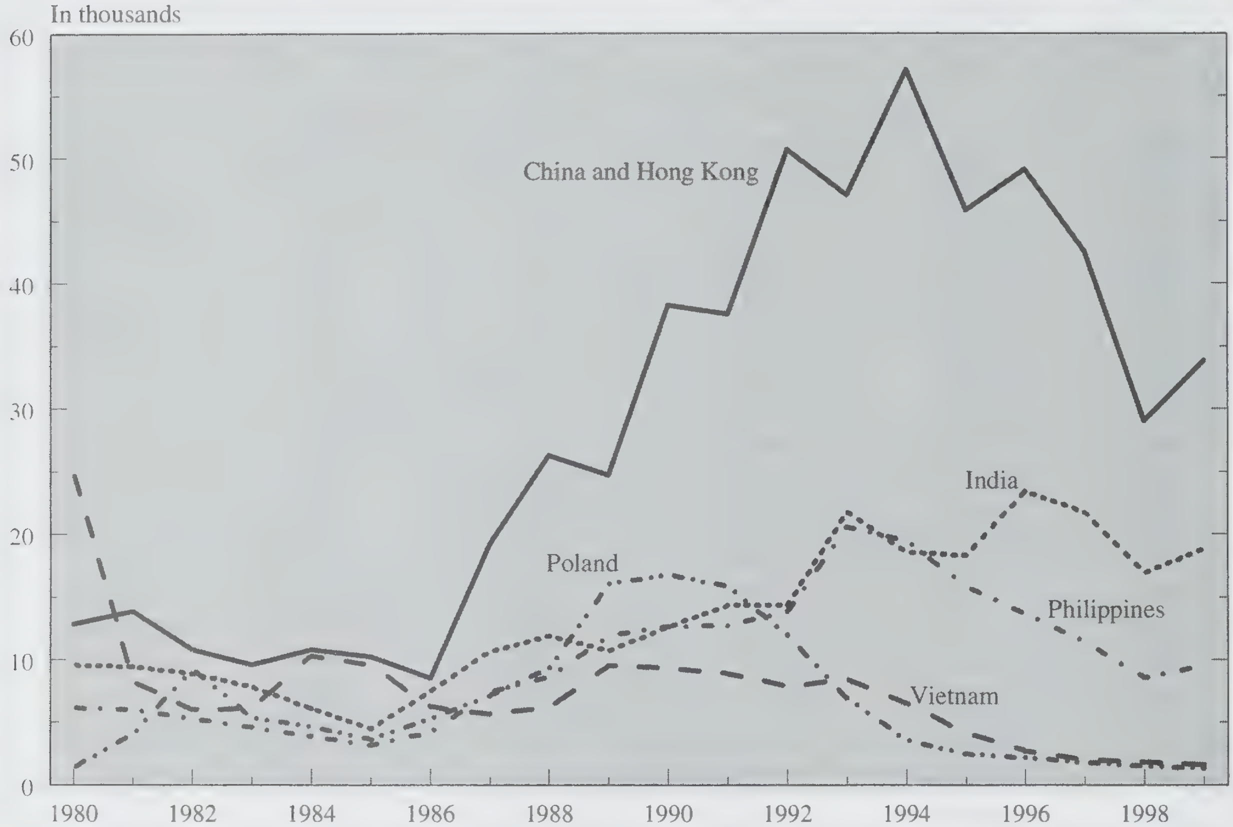
Year	Family	Economic	Refugees	Others [1]	Total
	Number				
1980	49,440	46,431	40,658	6,969	143,498
1981	50,534	56,702	15,062	6,495	128,793
1982	50,186	51,148	17,002	2,994	121,330
1983	48,987	24,186	14,064	2,140	89,377
1984	44,593	26,095	15,556	2,353	88,597
1985	39,355	26,112	16,769	2,102	84,338
1986	42,469	35,837	19,199	1,835	99,340
1987	53,796	74,099	21,465	2,666	152,026
1988	51,396	80,221	26,739	3,172	161,528
1989	60,938	90,136	36,863	3,570	191,507
1990	74,365	95,637	36,100	10,314	216,416
1991	85,941	80,007	35,880	30,935	232,763
1992	96,792	82,283	37,022	38,751	254,848
1993	110,439	95,655	24,894	25,770	256,758
1994	93,716	96,571	19,750	14,353	224,390
1995	77,227	100,905	27,763	6,970	212,865
1996	68,319	120,277	28,342	9,107	226,045
1997	59,957	125,467	24,131	6,465	216,020
1998	50,881	94,971	22,700	5,612	174,164
1999	55,255	105,444	24,376	4,831	189,906
	Percentage				
1980	34.5	32.4	28.3	4.9	100.0
1981	39.2	44.0	11.7	5.0	100.0
1982	41.4	42.2	14.0	2.5	100.0
1983	54.8	27.1	15.7	2.4	100.0
1984	50.3	29.5	17.6	2.7	100.0
1985	46.7	31.0	19.9	2.5	100.0
1986	42.8	36.1	19.3	1.8	100.0
1987	35.4	48.7	14.1	1.8	100.0
1988	31.8	49.7	16.6	2.0	100.0
1989	31.8	47.1	19.2	1.9	100.0
1990	34.4	44.2	16.7	4.8	100.0
1991	36.9	34.4	15.4	13.3	100.0
1992	38.0	32.3	14.5	15.2	100.0
1993	43.0	37.3	9.7	10.0	100.0
1994	41.8	43.0	8.8	6.4	100.0
1995	36.3	47.4	13.0	3.3	100.0
1996	30.2	53.2	12.5	4.0	100.0
1997	27.8	58.1	11.2	3.0	100.0
1998	29.2	54.5	13.0	3.2	100.0
1999	29.1	55.5	12.8	2.5	100.0

[1] Includes live-in caregivers, deferred removal order and post determination refugees, retirees, provincial/territorial nominees, the backlog and the non stated.

Note: Preliminary data as of September 26, 2000.

Source: Citizenship and Immigration Canada, unpublished data.

Figure 8. Number of Immigrants According to the Five Main Countries of Birth, Canada, 1980-1999



Note: Data is preliminary as of September 26, 2000.
Source: Citizenship and Immigration Canada, unpublished data.

contributed to the changing of Canada's demographic landscape. On this score, at the 1996 Census, nearly a third of the Canadian population had roots other than Canadian, British or French.[4]

In Canada, the period from 1997 to 1998 was marked by a sizable drop in international immigration. During 1998, 42,900 fewer immigrants were admitted than in the previous year. Of the 42,900 fewer immigrants, some 37,000 were attributable to a decrease in immigrants of Asian origin. The increase in 1999 was also Asian, with some 11,000 of the 16,000 additional immigrants having as their place of birth a country in southern or eastern Asia. This is hardly surprising, since that part of the world has for some time been the largest source of Canadian immigration. As far back as the early 1980s, a majority of immigrants were of Asian origin. Together, China[5] (577,700), India (267,500), the Philippines (199,300) and Vietnam (145,900)

---

[4] Statistics Canada. "1996 Census: Ethnic Origin, Visible Minorities', The Daily, February 17 1998.

[5] Immigrants from China and Hong Kong are now counted together. Over the period from 1980 to 1999, there were 294,300 from China and 283,400 from Hong Kong.

Table 5. Countries of Birth from Which more than 2,000 Immigrants Came to Canada in 1997, 1998 and 1999

Country of Birth	1997	1998	1999	Difference between 1997 and 1998	Difference between 1998 and 1999
AFRICA					
Algeria	1,795	2,251	2,363	456	112
Egypte	2,043	1,298	1,245	-745	-53
AMERICA					
United States	4,403	4,142	4,910	-261	768
Jamaica	2,870	2,260	2,362	-610	102
ASIA					
Afghanistan	2,307	2,056	2,268	-251	212
Bangladesh	3,272	2,101	2,009	-1,171	-92
China	24,747	22,701	31,050	-2,046	8,349
South Korea	4,108	4,891	7,208	783	2,317
Hong Kong[1]	17,807	6,348	2,801	-11,459	-3,547
India	21,710	16,903	18,831	-4,807	1,928
Iran	7,889	6,996	6,200	-893	-796
Iraq	2,573	1,869	2,037	-704	168
Pakistan	12,178	8,423	9,575	-3,755	1,152
Philippines	11,411	8,540	9,518	-2,871	978
Sri Lanka	5,342	3,537	4,938	-1,805	1,401
Taiwan	12,785	6,946	5,314	-5,839	-1,632
Vietnam	2,004	1,826	1,622	-178	-204
EUROPE					
France	2,310	2,999	3,177	689	178
Great Britain	3,921	3,266	3,769	-655	503
Romania	4,048	3,082	3,571	-966	489
Ex USSR	10,791	11,911	10,655	1,120	-1,256
Russia	4,221	4,733	4,374	512	-359
Ukraine	2,638	2,744	2,821	106	77
Others	3,932	4,434	3,460	502	-974
Ex Yougoslavia	6,788	6,448	6,340	-340	-108
Bosnia-Hercegovina	2,211	2,491	2,425	280	-66
Others	4,577	3,957	3,915	-620	-42

[1] Includes Hong Kong SAR (Special Administrative Region), since July 1, 1997.
Note: Data is preliminary as of September 26, 2000.
Source: Citizenship and Immigration Canada, unpublished data.

accounted for more than a third of all immigrants admitted during this 20 year period (Figure 8). Again this year, ***Canadian immigration was primarily Asian, and of the 190,000 new arrivals, 113,300 (60%) were from Asia. They came primarily form China[6] (33,900), India (18,800), Pakistan (9,600) and the Philippines (9,500)***. The change in the number of Asian immigrants had a substantial impact on the total number of immigrants admitted to Canada (Table 5).

[6] Includes natives of Hong Kong.

During the last year, immigration from China showed the greatest increase. After declining between 1996 and 1998, the number of Chinese nationals admitted to Canada increased by 4,800 (16%) in 1999. Similarly, the number of immigrants from South Korea increased substantially to 7,200, the highest level since 1981. Compared with the previous year, this was a sharp increase of 47%, or 2,300 persons. Sri Lanka was a third country to show a sizable increase. For the first time in the past five years, the number of Sri Lankan immigrants was up, from 3,500 in 1998 to 4,900 in 1999, an increase of 1,400 (39%) from 1998. The number of Filipinos settling in Canada was also up, although the 9,500 Filipino immigrants admitted in 1999 were still far fewer than the 20,500 admitted in 1993.

The proportion of immigration from other regions of the world has remained relatively stable, apart from immigration from Africa and North and Central America, which posted an increase of nearly 14%. However, in absolute numbers this increase amounts to scarcely 2,000 and 1,000 additional immigrants for these two regions in comparison with the numbers admitted in 1998. Immigration from African countries totalled approximately 16,500 persons, a distant third behind both Asia and second-ranking Europe, which supplied nearly 39,000 immigrants. Europeans accounted for just over 20% of all immigrants admitted to Canada. From that part of the world, it was primarily immigrants from states of the former USSR that showed the greatest change in absolute numbers, dropping from 11,900 immigrants in 1998 to 10,700 the following year.

Immigrant Classes and Place of Birth

As is the case with immigrants in general, a substantial majority of economic immigrants are from Asia. In 1999, more than 65% (68,900) of economic immigrants were born in Asia, compared with only about 20% (21,300) from Europe. Of all Asian immigrants admitted to Canada in 1999, 61% (68,900) were admitted under the economic category. They came mainly from China[7] (26,400), India (8,300), South Korea (6,600) and Pakistan (5,800). Of the ten main countries of birth of immigrants in this class, only three were non-Asian: Russia (in seventh place), France (eighth place) and the United States (tenth place) with respectively 3,200, 2,800 and 2,500 immigrants (Table 6).

Even though the number of economic immigrants admitted during the last five years reached high levels, an analysis of past trends shows that this class is subject to sizable variations. For example, the number of economic immigrants declined by half from 1982 to 1983, reaching its lowest level for the period from 1980 to 1999. Conversely, the number of such immigrants more than doubled from 1986 to 1987.

---

[7] Includes Hong Kong.

Table 6. Number of Immigrants According to the 10 Main Countries of Birth by Class, Canada, 1999

Country of Birth	Category				
	Economic	Family	Refugees	Others (includes backlog)	Total
China and Hong Kong	26,379	6,682	484	306	33,851
India	8,268	9,792	693	78	18,831
Pakistan	5,837	2,484	1,084	170	9,575
Philippines	2,410	4,117	4	2,987	9,518
South Korea	6,584	612	3	9	7,208
Iran	4,000	731	1,438	29	6,198
Taiwan	4,915	395	0	4	5,314
Sri Lanka	688	1,579	2,618	52	4,937
United States	2,493	2,381	23	13	4,910
Russia	3,231	804	241	98	4,374

Source: Citizenship and Immigration Canada, unpublished data.

Even though the targeted average of 124,400 economic immigrants was not attained, this year's level was nevertheless higher than last year's. Provided the economic climate remains favourable to immigration, the number of immigrants in this class may be expected to rise in the coming years. This is borne out by the preliminary data for the months of January to October 2000. During that period, Canada admitted 112,500 economic immigrants, compared with 89,700 for the same period in 1999. If the trend continues, Canada should admit 115,000 by the end of 2000. Similarly, if the level of immigration in the family and refugee classes is maintained, the total number of immigrants for 2000 should be in the range of 220,000.

More family-class immigrants were also admitted in 1999. Their number rose by 4,400 to 55,300, up 8.6% from 1998. While this number is consistent with the forecasts in the Immigration Plan, it falls far short of the levels recorded in the early 1990s. For example, it is half the level recorded in 1993, the year when the greatest number of family-class immigrants were admitted.

Just as with the economic class, persons from Asia were strongly predominant among family-class immigrants. They accounted for 58% of immigrants in that class (32,200), compared with 15% (8,300) from Europe and 26% (14,700) from the rest of the world. With 9,800 family-class immigrants, or 18% of the total, India is the dominant country of origin for this class. China (6,700), the Philippines (4,100), Pakistan (2,500) and the United States (2,400) are also among the five main regions, but with a smaller contribution. For immigrants of this class, the distribution by country of origin in 1999 does not greatly differ from what was observed throughout the period 1980 to 1999. Over that period, some 1,264,600 immigrants entered Canada

in the family class. India, with 189,000 immigrants, was dominant in this class, followed by China in second place with 122,500. The United States, with 61,400 immigrants admitted since 1980, is also one of the five main countries of birth of immigrants admitted in this class.

Refugees are the third class of immigrants under Canada's immigration policy. These are persons fleeing armed conflict, political oppression or any other circumstances that could endanger their life. According to United Nations data, there were 14.9 million refugees throughout the world in 1990, and 21.5 million almost a decade later. This increase in the number of refugee worldwide is due to the major crises that have erupted, notably in the Balkans (Bosnia-Herzegovina, Kosovo), Chechnya and East Timor. Added to these are humanitarian problems (floods, famine, etc.) that have arisen in parts of Africa and Asia. Indeed, Asia is the source of the largest proportion of refugees, with 35% of all refugees worldwide. Africa and Europe each account for 29%, and North America, 6%. In 1999, the major industrialized countries received 530,000 applications for political asylum. Applications to Germany (95,100), the United Kingdom (71,200) and Switzerland (46,100) accounted for 40% of the total. Canada, ranking ninth, received 5% (29,400) of these 530,000 applications. It accepted just over a third (11,800). Among countries having a refugee resettlement program for victims of persecution, Canada ranks highly, directly behind the United States. For 1999, the number of refugees receiving resettlement assistance stood at 85,000 in the United States and 17,100 in Canada.[8]

All categories of refugees combined, 24,400 persons were admitted to Canada in 1999. The two main countries of origin were Sri Lanka (2,600) and Bosnia (2,300). In the case of Sri Lanka, the social and political violence stemming from the conflict between the government and Tamil separatists has led many Sri Lankans to seek exile in host countries since the early 1990s. Since 1990, Canada has admitted 31,500 Sri Lankan refugees, including 6,000 at the height of the crisis in 1995. The arrival of Bosnian refugees is a more recent phenomenon. Canada received the first contingent of 70 refugees in 1992. The number peaked at 4,100 in 1994 and subsequently stabilized at approximately 2,400 persons per year.

Over a longer period, however, the greatest numbers of refugees admitted to Canada have come from Vietnam and Poland. The past twenty years have seen 504,300 refugees admitted to Canada, with two major waves marking the period. The first wave, which resulted from the change in political regime following the American withdrawal from Vietnam and the armed conflicts that subsequently dragged on in Southeast Asia, began shortly before 1980. It is estimated that more than 400,000 Vietnamese left their country during

[8] The figures cited in this paragraph were obtained from the Office of the United Nations High Commissioner for Refugees and Immigration Canada (Web site).

the period from 1978 to 1984. In 1980, Canada alone admitted 24,000 Vietnamese refugees. Another major wave of refugees, this time from Poland, began in the late 1980s. Over the past twenty years, 71,400 Poles have found refuge in Canada, half of them between 1989 and 1991.

Destination of Immigrants

The number of immigrants admitted to Canada conceals great regional variations, since some destinations are more preferred by the newcomers. ***Ontario has long been exceptionally attractive to immigrants. In the past decade, it has consistently attracted more than half of international immigrants. This dominance continued in 1999, with some 104,000 newcomers choosing Ontario as their province of destination, representing 55% of all immigrants admitted. British Columbia and Quebec were the other two provinces receiving the greatest number of immigrants, although in more modest proportions. They received respectively 19% (36,100) and 15% (29,200) of immigrants***. Canada's other provinces and territories seemed much less attractive to international immigrants. Fewer than 11% of immigrants chose to settle in those areas, with more than half of that proportion (6%) going to Alberta (Table 7).

It is interesting to examine the distribution of immigrants admitted by province of destination and class. An analysis of destination by immigrant class reveals that one quarter of immigrants settling in Quebec were refugees, while the corresponding proportion in Ontario was only 11.5% and in British Columbia, 5.3%. Prince Edward Island was the province with the highest proportion of refugees, although the numbers were small: nearly half of the 138 immigrants settling in that province were refugees.

On the other hand, Ontario and British Columbia received a larger share of their immigrants under the economic component of the policy. Whereas the economic class accounts for 55.5% of all immigrants at the national level, it accounts for 58% of immigrants choosing Ontario and 60% of those settling in British Columbia. However, Yukon has the highest proportion of economic immigrants (62%). But here again the numbers are small, and this proportion represents only 49 persons. This is very few, compared to the 60,200 economic immigrants received by Ontario.

For the family class, the differences between provinces are smaller than for the economic and refugee classes. Immigrants in the family class represent 29% of immigrants to Canada as a whole, compared with 26% for Quebec, 29% for Ontario and 30% for British Columbia. Newfoundland is the province with the smallest proportion of family-class immigrants, namely 16% of all immigrants received (Figure 9 and Table 8).

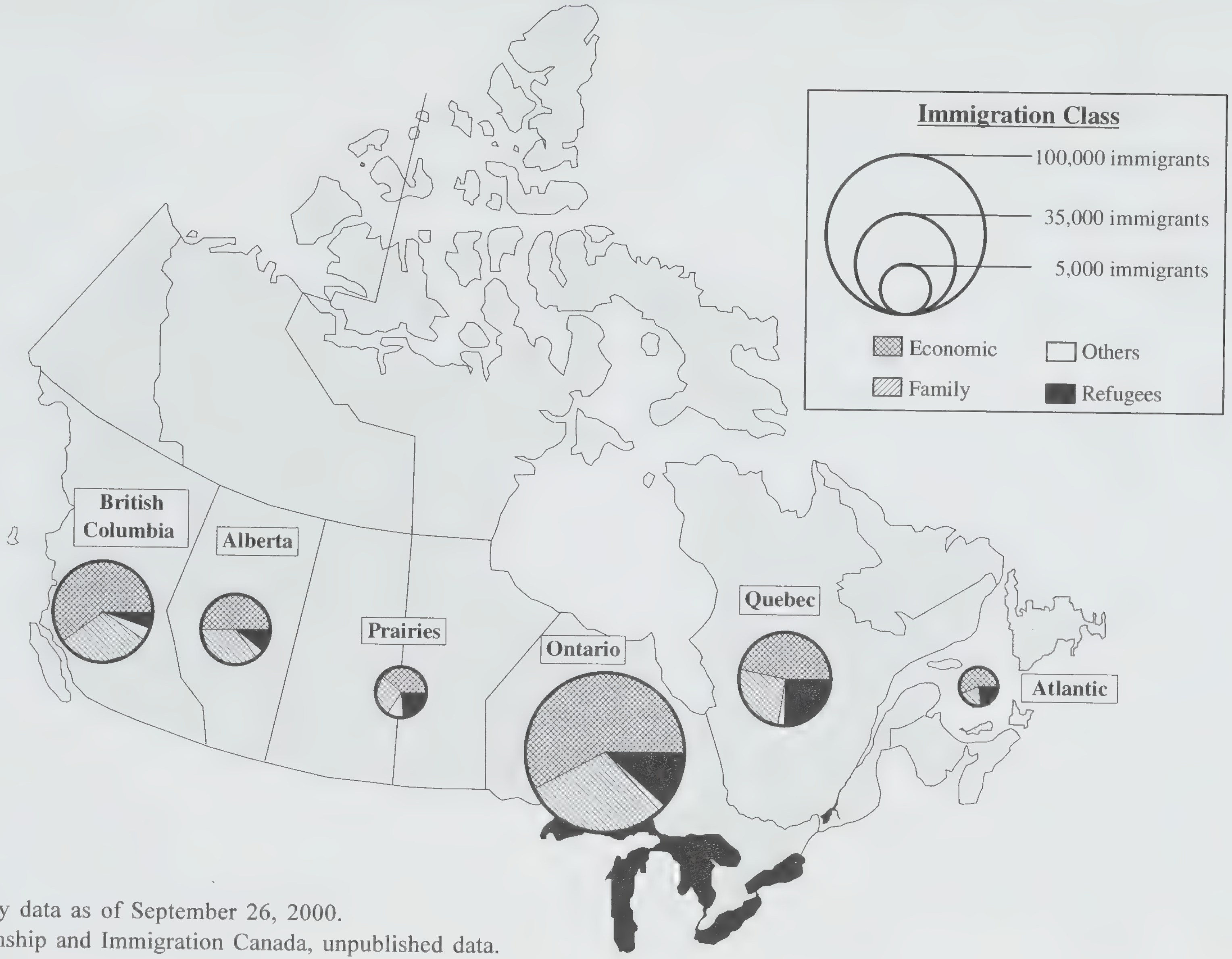
Figure 10 shows some differences in the distribution of immigrants by place of birth and province of destination. Immigrant networks have developed

Table 7. Percentage Distribution of Landed Immigrants by Intended Province of Destination, Canada, 1971-1999

Province	Year													
	1971	1981	1986	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Newfoundland	0.7	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Prince Edward Island	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nova Scotia	1.5	1.1	1.1	0.8	0.7	0.6	0.9	1.2	1.5	1.7	1.4	1.3	1.2	0.8
New Brunswick	0.9	0.8	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Quebec	15.8	16.4	19.6	17.7	18.9	22.3	19.2	17.5	12.5	12.8	13.2	12.9	15.3	15.4
Ontario	52.8	42.7	50.0	54.6	52.9	51.5	54.6	52.5	52.4	54.4	53.0	54.5	52.9	54.8
Manitoba	4.3	4.2	3.8	3.2	3.1	2.4	2.0	1.9	1.8	1.7	1.7	1.7	1.7	2.0
Saskatchewan	1.2	1.9	1.9	1.1	1.1	1.1	1.0	0.9	1.0	0.9	0.8	0.8	0.9	0.9
Alberta	7.1	15.0	9.7	8.4	8.8	7.3	7.0	7.2	8.0	6.7	6.1	5.9	6.4	6.4
British Columbia	15.5	17.1	12.6	13.2	13.4	13.9	14.5	17.9	21.9	20.9	23.0	22.2	20.7	19.0
Yukon, Northwest Territories and Nunavut	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Unknown	—	0.3	0.1	0.1	0.2	0.2	0.1	0.1	0.1	—	—	—	—	—
Total Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	121,717	128,793	99,340	191,507	216,417	232,764	254,848	256,758	224,390	212,865	226,045	216,020	174,164	189,906

Note: Preliminary data as of September 26, 2000.
Sources: Employment and Immigration Canada, ***Immigration Statistics*** and after 1980, Citizenship and Immigration Canada, unpublished data.

Figure 9. Destination of Immigrants by Province and Class, 1999



Note: Preliminary data as of September 26, 2000.
Sources: Citizenship and Immigration Canada, unpublished data.

Table 8. Number of Immigrants and Distribution (in Percent) by Province of Destination and Class, Canada, 1999

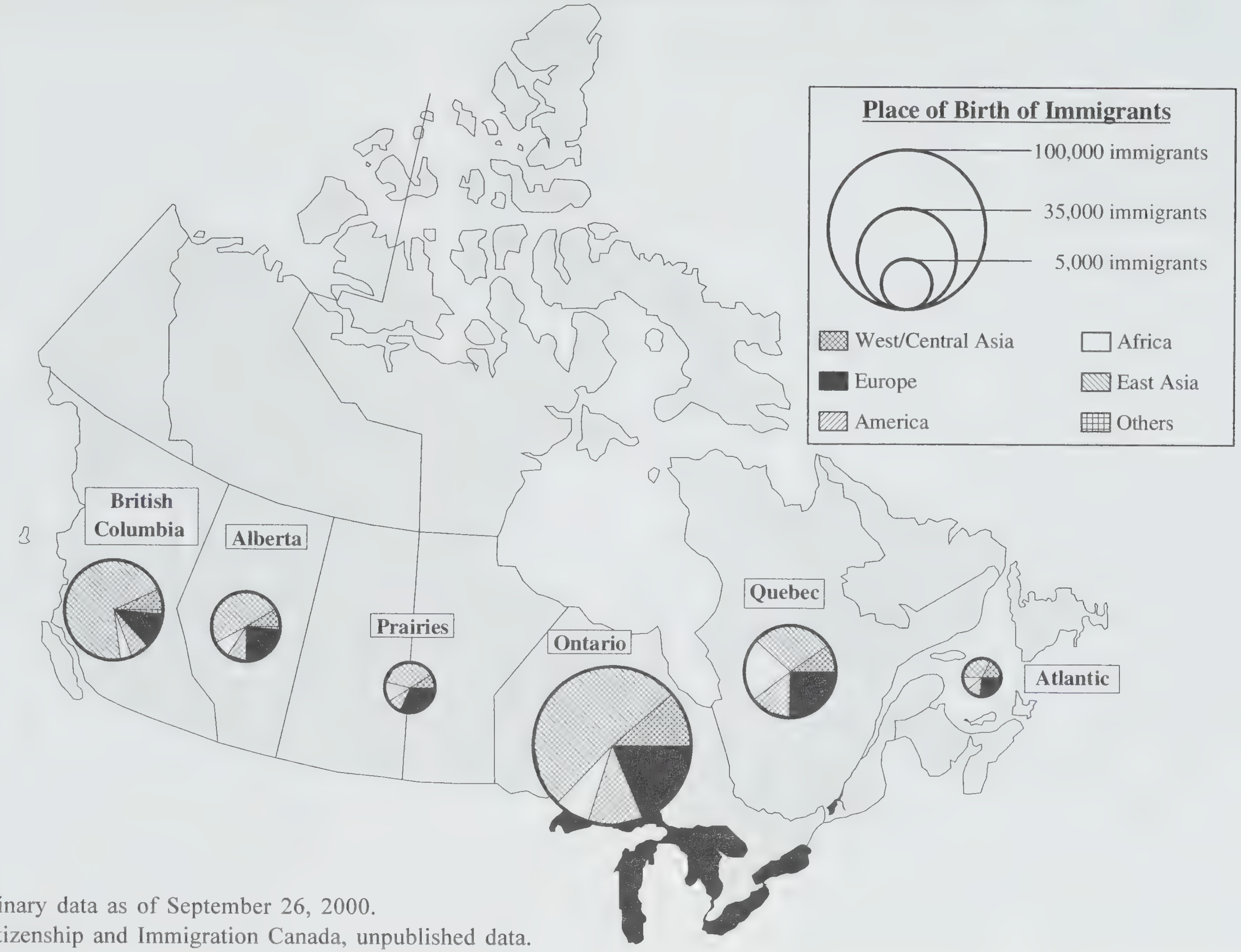
Province	Family	Economic	Refugees	Others[1]	Total
	Number				
Newfoundland	69	202	157	3	431
Prince Edward Island	32	39	67	—	138
Nova Scotia	330	1,016	262	2	1,610
New Brunswick	170	351	151	—	672
Quebec	7,548	13,658	7,333	650	29,189
Ontario	30,384	60,188	11,941	1,539	104,052
Manitoba	1,027	1,433	771	484	3,715
Saskatchewan	451	663	511	99	1,724
Alberta	4,180	6,082	1,286	522	12,070
British Columbia	10,991	21,749	1,896	1,462	36,098
Yukon	25	49	—	5	79
Northwest Territories	22	17	—	22	61
Nunavut	5	1	—	—	6
Not Stated	22	37	2	—	61
Total	55,256	105,485	24,377	4,788	189,906
	Distribution by Province (%)				
Newfoundland	0.1	0.2	0.6	0.1	0.2
Prince Edward Island	0.1	—	0.3	—	0.1
Nova Scotia	0.6	1.0	1.1	—	0.8
New Brunswick	0.3	0.3	0.6	—	0.4
Quebec	13.7	12.9	30.1	13.6	15.4
Ontario	55.0	57.1	49.0	32.1	54.8
Manitoba	1.9	1.4	3.2	10.1	2.0
Saskatchewan	0.8	0.6	2.1	2.1	0.9
Alberta	7.6	5.8	5.3	10.9	6.4
British Columbia	19.9	20.6	7.8	30.5	19.0
Yukon	—	—	—	0.1	—
Northwest Territories	—	—	—	0.5	—
Nunavut	—	—	—	—	—
Not Stated	—	—	—	—	—
Total	100.0	100.0	100.0	100.0	100.0
	Distribution by Class (%)				
Newfoundland	16.0	46.9	36.4	0.7	100.0
Prince Edward Island	23.2	28.3	48.6	—	100.0
Nova Scotia	20.5	63.1	16.3	0.1	100.0
New Brunswick	25.3	52.2	22.5	—	100.0
Quebec	25.9	46.8	25.1	2.2	100.0
Ontario	29.2	57.8	11.5	1.5	100.0
Manitoba	27.6	38.6	20.8	13.0	100.0
Saskatchewan	26.2	38.5	29.6	5.7	100.0
Alberta	34.6	50.4	10.7	4.3	100.0
British Columbia	30.4	60.2	5.3	4.1	100.0
Yukon	31.6	62.0	—	6.3	100.0
Northwest Territories	36.1	27.9	—	36.1	100.0
Nunavut	83.3	16.7	—	—	100.0
Not Stated	36.1	60.7	3.3	—	100.0
Total	29.1	55.5	12.8	2.5	100.0

[1] Includes live-in caregivers, deferred removal order and post determination refugees, retirees, provincial/territorial nominees, the backlog and the non stated.

Note: Preliminary data as of September 26, 2000.

Source: Citizenship and Immigration Canada, unpublished data.

Figure 10. Destination of Immigrants by Province and Place of Birth, 1999



Note: Preliminary data as of September 26, 2000.
Sources: Citizenship and Immigration Canada, unpublished data.

over time, and as a result, some groups tend to favour one province over another. In the case of Quebec, knowledge of French may be a major asset. A majority of immigrants settling in the main province of destination, namely Ontario, list an Asia country (China, India, etc.) as their place of birth. For every 1,000 immigrants arriving in Ontario, 517 are born in East Asia, 184 in Europe, 114 in the rest of the Americas, 114 in West/Central Asia and 71 in Africa. The presence of large Chinese and Indian communities in Ontario offers networks favourable to the integration of newcomers of these same origins, since it is often easier and more pleasant, and indeed more advantageous, for newcomers to be in a community where they can maintain close ties with their own culture. For British Columbia, the second-ranking province of destination, the proportion of immigrants from East Asia is even greater than for Ontario. Indeed, British Columbia is known for the large proportion of persons of Asian origin in its population. Thus, for every 1,000 immigrants who go to British Columbia, 714 are born in East Asia, compared to only 119 in Europe. The remaining 167 are unequally divided between West/Central Asia (69), the Americas (62) and Africa (37).

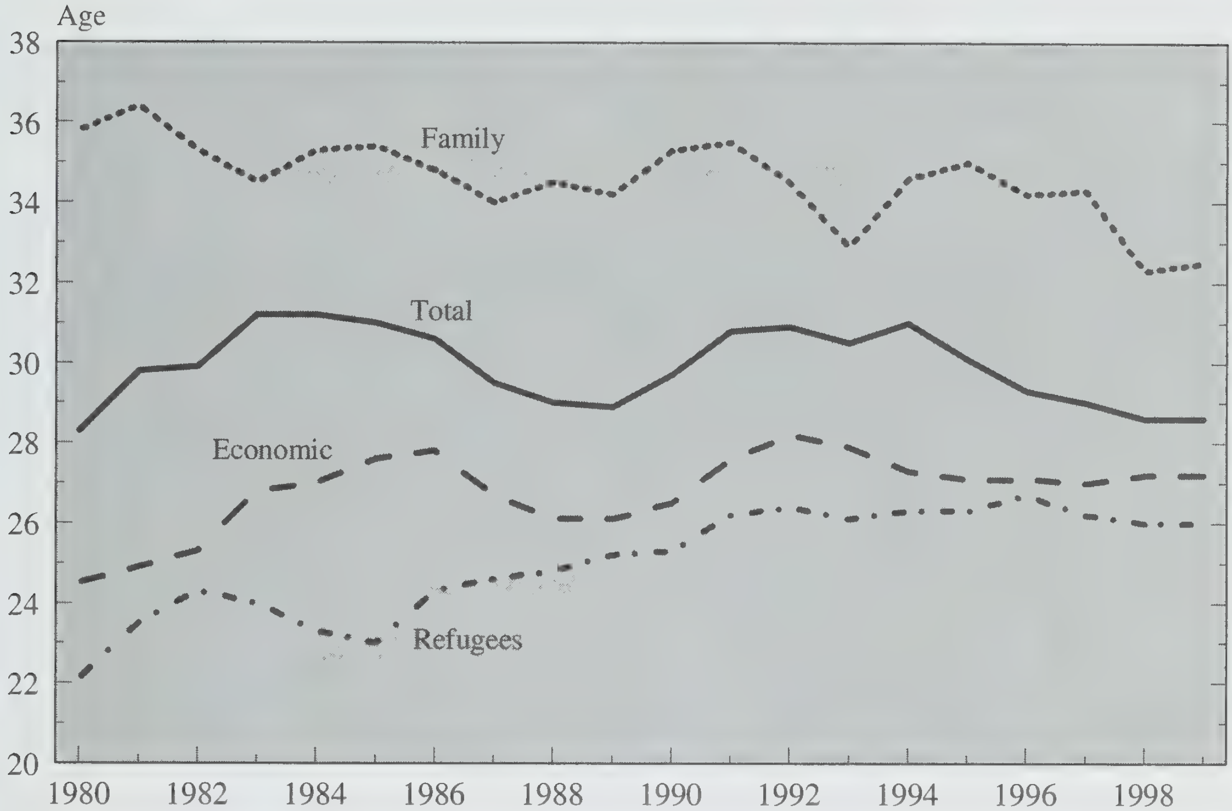
Not surprisingly, the linguistic distinctiveness of Quebec is reflected in the composition of its immigrant population. In terms of place of origin, its immigrant numbers differ markedly in their makeup from those of Ontario and British Columbia. The three major regions—East Asia, Europe and Africa—are represented in practically the same proportions. In order of numerical importance, immigrants from East Asia represent 29%, those from Europe, 25% and those from Africa, 22% of all those arriving in Quebec. Immigrants from other places in the Americas and from West/Central Asia account for respectively 14% and 10%. The sizable share of immigrants from West/Central Asia may be explained by the large numbers from the Middle East—especially Lebanon, but also Iran and Afghanistan.

Age and Sex of Immigrants

Considering the aging of the Canadian population, it seems important to analyse the composition of Canadian immigration by sex and age. During the period from 1980 to 1999, the average age of immigrants has shown little variation, ranging between 28 and 32 from one year to the next. This is a few years less than the average age of the Canadian population as a whole, which is roughly 36. However, there are sizable differences between classes on this score. ***In 1999, the average age of immigrants in the economic class was 27.2, those in the family class, 32.5, and refugees, 26.0. For all classes combined, the average age was 28.6*** (Figure 11).

A comparison of the average age of male immigrants and female immigrants shows that male newcomers tended to be younger than their female counterparts. In the period from 1980 to 1999, the average age of male immigrants on arrival in Canada was consistently lower than that of female immigrants. However,

Figure 11. Trend in the Average Age by Class, Canada, 1980-1999



Note: Preliminary data as of September 26, 2000.
Source: Citizenship and Immigration Canada, unpublished data.

the gap narrowed over time. In 1980, the age difference between males and females was about two years, whereas twenty years later is was only one month.

The traditional image of the immigrant is that of a young man, often single or sometimes with a young family, who seeks to settle in a new country and work there, in hopes of doing better in his adoptive country than in his homeland. The age distribution of immigrants shows that the reality is more complex than this image would suggest. Indeed, the age distribution of Canada's immigrant population does not differ as much as might be imagined from that of the Canadian population as a whole. When the sex ratio—the ratio of males to females—is taken into account, another piece of the traditional image of the typical immigrant falls away. In the Canadian population as a whole, females outnumber males; the sex ratio is 98. For the immigrant population, the ratio is somewhat lower. From 1980 to 1999, Canada received 1,817,000 female immigrants and 1,739,700 male immigrants. This means that for every 100 females who settled in Canada, there were 96 males.

Of the six main source countries in 1999, immigrants from the Philippines, China, Korea and India all presented sex ratios under 100 over the 1980-1999

period (respectively 68, 89, 92 and 99). In contrast, a majority of the arrivals from the other two main source countries, Iran and Pakistan, were males. Iranian-born immigrants in particular have a high sex ratio, with 124 males for every 100 females, while the ratio for Pakistani immigrants was 118.

Conclusion

The 190,000 international immigrants admitted in 1999 represent a 9% increase over the previous year's numbers. The increase was reflected in all classes of immigrants; however, it was the economic class that showed the strongest growth with an increase of 11%. Furthermore, this class was the largest one, since 55% of all immigrants were admitted under the economic class. Ontario continued to be the most attractive province for newcomers with 55% of immigrants choosing it as their province of destination, compared to 19% for British Columbia and 15% for Quebec.

INTERNAL MIGRATION

Today as in the past, migratory movements are quite often driven by economic motivations. Regions with booming economies become generally prized by persons intending to migrate. Conversely, regions with slow-growing or declining economies often have negative net migration. In Canada, regional variations in economic growth change internal migratory flows. With regional differences in natural growth tending to diminish, internal migration has a direct impact on differential regional growth rates and the spatial redistribution of the Canadian population.

Interprovincial Migration

According to preliminary data based on child tax benefit files, the number of interprovincial migrants for 1999 is estimated at 303,000 (Table 10). Expressed as a percentage, this means that 1% of Canadians permanently migrated from one province to another. A closer look at the distribution of migratory exchanges reveals major shifts, especially in the Maritime provinces—***Prince Edward Island, Nova Scotia and New Brunswick. Those three provinces, which had a negative balance in 1998 (Table 9), posted a positive balance in 1999***. All three showed increased inflows and decreased outflows, with the result that their migration balance favoured an increase in their population. Newfoundland, while it still had a negative balance, saw an increased number of in-migrants and a sizable decrease in the number of out-migrants in 1999. It is possible that the recent discoveries of oil and gas reserves off the east coast of Newfoundland have served to slow the population decrease observed in this province since 1993, although the impact of this growth industry is still modest from a strictly demographic standpoint.

In absolute numbers, ***the most notable changes occurred in Alberta. That province, which had a gain of 40,100 migrants last year, saw that gain drop to 14,000 in 1999 (Table 11). This decrease is attributable both to sharply decreased inflows from British Columbia and Ontario and to much larger outflows to those same provinces***. These two patterns also explain the improvement in British Columbia's balance. The latter province, which registered migratory losses for a second straight year, nevertheless reduced its negative balance by half, from -17,500 in 1998 to -8,100 in 1999. The improved balance was mainly due to increased inflows from Ontario.

Manitoba and Saskatchewan also have a negative balance. In fact, the most recent migratory gains for these two provinces go back more than fifteen years. Of the two, Saskatchewan has the largest deficit in its demographic exchanges with other provinces. Its negative balance is 6,200, the highest level since 1992.

Table 9. Annual Number of Interprovincial Migrants According to Revenue Canada Tax Files

January to December 1998

Number of Migrants: 298,158

Province of Origin	Province of Destination												
	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.	Nunavut
Newfoundland	...	233	1,772	609	218	5,730	229	253	5,205	718	39	201	145
Prince Edward Island	76	...	624	488	100	621	27	36	477	171	2	8	4
Nova Scotia	1,039	558	...	2,068	610	6,315	397	299	3,578	1,593	40	147	124
New Brunswick	269	415	2,441	...	1,885	3,977	242	167	2,325	747	25	68	60
Quebec	239	134	851	1,523	...	23,826	521	371	3,649	3,357	50	66	81
Ontario	2,900	733	5,144	2,799	12,426	...	4,507	1,982	14,993	15,830	256	250	136
Manitoba	123	17	319	196	382	4,692	...	2,983	6,178	3,395	46	52	37
Saskatchewan	126	51	253	145	272	2,424	2,443	...	11,475	3,087	42	154	50
Alberta	1,708	306	1,758	1,021	1,478	9,568	3,191	8,116	...	16,055	235	652	73
British Columbia	658	160	1,922	766	2,648	15,544	3,431	4,069	33,771	...	628	337	75
Yukon	83	3	33	24	43	259	63	152	926	941	...	90	15
Northwest Territories	99	5	46	32	36	284	154	254	1,574	524	135	...	229
Nunavut	61	4	34	15	58	182	118	54	135	70	20	292	...
In	7,381	2,619	15,197	9,686	20,156	73,422	15,323	18,736	84,286	46,488	1,518	2,317	1,029
Out	15,352	2,634	16,768	12,621	34,668	61,956	18,420	20,522	44,161	64,009	2,632	3,372	1,043
Net Migration	-7,971	-15	-1,571	-2,935	-14,512	11,466	-3,097	-1,786	40,125	-17,521	-1,114	-1,055	-14

Source: Statistics Canada, Demography Division, Population Estimates Section.

Table 10. Annual Number of Interprovincial Migrants According to Revenue Canada Tax and Child Tax Credit Files

January to December 1999

Number of Migrants: 302,959

Province of Origin	Province of Destination												
	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.	Nunavut
Newfoundland	...	299	2,012	692	93	5,410	245	152	3,140	716	49	130	93
Prince Edward Island	123	...	540	357	87	682	34	22	280	76	20	11	2
Nova Scotia	1,373	566	...	2,628	703	6,012	494	234	2,157	1,433	38	69	61
New Brunswick	410	521	2,598	...	2,110	3,828	258	197	1,530	656	57	37	30
Quebec	251	66	1,049	1,784	...	25,656	635	156	2,535	3,369	37	64	73
Ontario	3,748	785	5,885	3,882	13,846	...	4,644	1,885	11,329	16,587	129	406	221
Manitoba	158	47	482	199	485	5,428	...	2,716	4,685	3,308	42	86	63
Saskatchewan	153	21	377	159	225	2,805	2,878	...	12,471	3,759	61	176	63
Alberta	2,741	299	2,383	1,706	1,850	12,506	3,827	8,096	...	20,026	292	963	119
British Columbia	997	286	1,641	793	2,618	16,890	2,939	3,235	28,691	...	705	366	71
Yukon	48	13	17	8	33	230	117	79	603	844	...	67	12
Northwest Territories	92	—	140	72	30	324	95	121	1,242	283	56	...	214
Nunavut	72	—	84	32	42	200	98	25	130	46	8	308	...
In	10,166	2,903	17,208	12,312	22,122	79,971	16,264	16,918	68,793	51,103	1,494	2,683	1,022
Out	13,031	2,234	15,768	12,232	35,675	63,347	17,699	23,148	54,808	59,232	2,071	2,669	1,045
Net Migration	-2,865	669	1,440	80	-13,553	16,624	-1,435	-6,230	13,985	-8,129	-577	14	-23

Source: Statistics Canada, Demography Division, Population Estimates Section.

Table 11. Net Migration for Provinces and Territories, 1972-1999

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yuk.	N.W.T.	Nun.	Total Number of Interprovincial Migrants
1972	-189	858	2,845	241	-19,891	8,227	-7,735	-17,296	6,538	24,927	575	900	...	375,184
1973	-2,510	478	2,107	2,841	-14,730	-5,275	-2,200	-13,261	2,698	30,537	-269	-416	...	433,992
1974	-618	1,386	1,576	4,192	-11,852	-22,163	-5,400	-4,835	14,810	22,655	97	152	...	421,336
1975	915	814	4,454	7,572	-12,340	-25,057	-4,134	6,555	23,463	-2,864	242	380	...	385,330
1976	-2,732	309	361	1,640	-20,801	-10,508	-3,655	3,819	34,215	-1,490	-350	-808	...	376,970
1977	-4,009	614	-1,277	-886	-46,536	8,596	-3,789	384	32,344	15,507	57	-1,005	...	366,918
1978	-3,540	25	-109	-1,644	-33,424	415	-9,557	-3,701	31,987	20,698	-178	-972	...	348,929
1979	-4,217	-225	-1,840	-2,219	-30,025	-15,317	-13,806	-3,510	39,212	33,241	-447	-847	...	370,862
1980	-3,082	-1,082	-2,494	-4,165	-24,283	-34,919	-11,342	-4,382	46,933	40,165	-419	-930	...	372,167
1981	-6,238	-783	-2,465	-4,766	-22,549	-19,665	-3,621	-520	40,243	21,565	-1,376	175	...	380,041
1982	261	-6	1,591	2,183	-28,169	19,614	1,498	1,743	3,961	-2,019	-1,208	551	...	322,634
1983	-1,092	799	3,861	2,296	-19,080	32,825	950	2,501	-26,246	4,029	-808	-35	...	285,599
1984	-3,585	524	2,963	812	-10,943	36,691	-49	733	-30,591	3,505	-111	51	...	273,323
1985	-5,019	-13	-234	-1,559	-6,023	33,414	-1,755	-5,014	-9,568	-3,199	-445	-585	...	281,275
1986	-4,682	-493	-739	-2,897	-3,020	42,916	-3,039	-7,020	-20,293	910	179	-1,822	...	302,352
1987	-4,374	301	-2,183	-1,762	-7,410	40,278	-4,751	-9,043	-27,595	17,618	100	-1,179	...	318,890
1988	-2,154	424	71	-1,215	-7,003	14,898	-8,584	-16,338	-5,535	25,865	349	-778	...	323,685
1989	-2,606	-102	572	-21	-8,379	-1,205	-10,004	-18,589	3,366	37,367	-30	-369	...	347,990
1990	-1,137	-273	-106	1,014	-9,567	-15,117	-8,613	-15,928	11,055	38,704	-26	-6	...	332,637
1991	-1,084	-415	1,039	-79	-13,047	-9,978	-7,581	-9,499	5,511	34,572	478	83	...	315,420
1992	-2,563	232	355	-1,087	-9,785	-13,530	-6,417	-7,727	1,030	39,578	215	-220	-81	309,680
1993	-3,397	532	-1,143	-492	-7,426	-12,771	-5,206	-4,543	-2,355	37,595	-755	-43	4	283,737
1994	-6,204	694	-2,694	-505	-10,252	-4,527	-4,010	-3,958	-2,684	34,449	-245	75	-139	286,860
1995	-6,566	368	-1,972	-931	-10,248	-1,764	-3,344	-3,190	4,251	23,414	656	-440	-234	286,746
1996	-7,945	401	-1,064	-910	-15,358	-1,706	-3,738	-1,871	15,069	17,798	215	-642	-249	284,484
1997	-8,522	-241	-2,074	-1,812	-17,559	6,823	-6,717	-2,669	32,459	1,980	-558	-845	-265	291,580
1998	-7,971	-15	-1,571	-2,935	-14,512	11,466	-3,097	-1,786	40,125	-17,521	-1,114	-1,055	-14	298,158
1999	-2,865	669	1,440	80	-13,553	16,624	-1,435	-6,230	13,985	-8,129	-577	14	-23	302,959
Total	-97,725	5,780	1,270	-7,014	-447,765	79,285	-141,131	-145,175	278,388	491,457	-5,753	-10,616	-1,001	9,279,738

Note: Until 1991, Nunavut is included in the Northwest Territories.

Source: Statistics Canada, Demography Division, Population Estimates Section.

As the main hub of internal migration, Ontario is the province that has the most migratory movements. The number of persons from another Canadian province establishing residence in Ontario is estimated at 80,000, while the number of out-migrants is estimated at 63,300. With a positive balance of 16,600, ***Ontario posted the biggest migratory gain in 1999***. Ontario's strong economic performance can be related to this improvement in the migration balance. Despite the language barrier between Quebec and Ontario, there are large migratory exchanges between these two provinces: 13,800 people left Ontario to settle in Quebec and 25,700 did the reverse migration. In other words, for every Ontario resident who migrates to Quebec, there are two Quebec residents who migrate to Ontario.

Quebec is generally in a loss position in its migratory exchanges with other provinces. During the period from 1972 to 1999, Quebec lost nearly 450,000 people just as a result of internal migration. This is three times as much as Saskatchewan and Manitoba, which rank second and third among the provinces in terms of the greatest number of losses. Alberta and British Columbia, which have enjoyed strong economic growth in the past thirty years, registered the greatest number of interprovincial migrants over the same period, namely 280,000 and 490,000 respectively.

These figures on inflows and outflows tell us very little about the propensity to migrate of people living in the different provinces. All things being otherwise equal, a more populous province would generate a greater number of migrants. It is therefore useful to look at the out-migration rates to get a better grasp of the propensity to migrate of each province's inhabitants. An analysis of these rates provides a quite different picture of internal migration, since it looks at the number of out-migrants from a province in relation to its population size. For example, Quebec, which has much greater losses than the other provinces, is nevertheless the province with the lowest propensity to migrate: only 4.9 individuals per 1,000 leave Quebec, compared to 24.1 per 1,000 for Newfoundland. In 1999, Newfoundland still has the highest out-migration rate of all Canadian provinces. Like Quebec, Ontario has a very low out-migration rate.

Conclusion

The Atlantic provinces greatly improved their migratory exchange in 1999. Three of the four Atlantic provinces even posted a positive balance. Quebec, Manitoba and British Columbia also reduced their migratory loss. By contrast, Saskatchewan had a less favourable year, with its migratory losses increasing. Ontario and Alberta posted the largest migratory gains, although Alberta saw its net interprovincial migration decrease considerably from the previous year.

Appendices

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

NEWFOUNDLAND

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory						In	Out	Net	
1972	535.9	7.5	9.5	0.4	12.9	3.3	0.7	0.2	—	11.2	11.4	-0.2	-2.4
1973	543.4	4.4	8.5	-1.7	11.9	3.4	1.0	0.3	0.1	13.0	15.5	-2.5	-2.4
1974	547.8	4.7	7.0	0.1	10.2	3.3	1.0	0.3	—	12.4	13.0	-0.6	-2.4
1975	552.5	7.5	8.0	1.9	11.2	3.2	1.1	0.2	0.1	12.3	11.4	0.9	-2.4
1976	559.9	4.0	7.8	-2.2	11.1	3.3	0.7	0.2	—	9.7	12.4	-2.7	-1.6
1977	563.9	2.6	7.3	-3.6	10.4	3.1	0.6	0.2	—	8.1	12.2	-4.0	-1.1
1978	566.5	2.0	6.4	-3.4	9.5	3.1	0.4	0.2	—	8.1	11.7	-3.5	-1.1
1979	568.4	2.2	7.0	-3.7	10.2	3.1	0.6	0.2	0.1	8.9	13.1	-4.2	-1.1
1980	570.7	3.4	7.0	-2.5	10.3	3.3	0.6	0.1	0.1	9.3	12.4	-3.1	-1.1
1981	574.1	-0.6	6.9	-5.9	10.1	3.2	0.5	0.2	0.1	8.5	14.8	-6.2	-1.7
1982	573.5	4.2	5.8	0.5	9.2	3.4	0.4	0.2	0.1	10.6	10.3	0.3	-2.1
1983	577.7	2.0	5.4	-1.3	8.9	3.5	0.3	0.3	-0.2	7.6	8.7	-1.1	-2.1
1984	579.7	-0.5	5.0	-3.4	8.6	3.5	0.3	0.3	0.1	5.7	9.3	-3.6	-2.1
1985	579.2	-2.0	4.9	-4.9	8.5	3.6	0.3	0.2	—	6.0	11.0	-5.0	-2.1
1986	577.2	-1.6	4.6	-4.5	8.1	3.5	0.3	0.3	0.2	7.7	12.4	-4.7	-1.7
1987	575.6	-1.0	4.1	-3.8	7.8	3.6	0.5	0.2	0.3	8.4	12.8	-4.4	-1.3
1988	574.6	1.1	3.9	-1.5	7.5	3.6	0.4	0.1	0.3	10.0	12.2	-2.2	-1.3
1989	575.7	0.9	4.0	-1.8	7.8	3.7	0.5	0.1	0.4	10.1	12.7	-2.6	-1.3
1990	576.5	1.7	3.7	-0.7	7.6	3.9	0.5	0.1	-0.1	10.2	11.4	-1.1	-1.3
1991	578 2	1.2	3.4	-0.6	7.2	3.8	0.6	0.2	—	9.9	10.9	-1.1	-1.6
1992	579.4	1.6	3.1	0.2	6.9	3.8	0.8	0.1	2.1	8.1	10.7	-2.6	-1.8
1993	581.0	-3.6	2.5	-4.3	6.4	3.9	0.8	0.1	-1.6	6.9	10.3	-3.4	-1.8
1994	577.4	-6.4	2.3	-6.9	6.3	4.1	0.6	0.1	-1.2	6.3	12.5	-6.2	-1.8
1995	571.0	-6.7	1.9	-6.9	5.9	3.9	0.6	0.1	-0.8	7.0	13.5	-6.6	-1.8
1996	564.3	-6.9	1.8	-8.0	5.7	3.9	0.6	0.2	-0.4	6.6	14.5	-7.9	-0.7
1997	557.4	-7.3	1.1	-8.4	5.4	4.3	0.4	0.2	-0.1	7.0	15.5	-8.5	...
1998 PD	550.1	-7.0	0.8	-7.8	5.0	4.3	0.4	0.3	0.1	7.4	15.4	-8.0	...
1999 PR	543.1	-2.0	0.3	-2.3	4.8	4.5	0.4	0.3	0.4	10.2	13.0	-2.9	...
2000 PR	541.1	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	535.9	13.91	17.70	0.66	23.90	6.21	1.27	0.32	0.06	20.72	21.07	-0.35
1973	543.4	8.02	15.58	-3.16	21.82	6.24	1.80	0.50	0.13	23.85	28.45	-4.60
1974	547.8	8.52	12.63	0.25	18.61	5.97	1.88	0.50	-0.01	22.50	23.62	-1.12
1975	552.5	13.42	14.37	3.36	20.16	5.79	1.99	0.40	0.13	22.20	20.56	1.65
1976	559.9	7.08	13.89	-3.93	19.81	5.91	1.29	0.33	-0.02	17.28	22.14	-4.86
1977	563.9	4.58	12.86	-6.41	18.42	5.55	1.03	0.34	-0.01	14.41	21.51	-7.09
1978	566.5	3.46	11.30	-5.96	16.79	5.49	0.66	0.36	-0.02	14.36	20.59	-6.24
1979	568.4	3.92	12.35	-6.56	17.86	5.51	0.97	0.27	0.14	15.66	23.07	-7.40
1980	570.7	5.98	12.21	-4.37	18.05	5.84	0.96	0.19	0.24	16.19	21.58	-5.38
1981	574.1	-1.13	12.03	-10.27	17.65	5.63	0.84	0.32	0.09	14.89	25.76	-10.87
1982	573.5	7.38	10.06	0.95	15.94	5.88	0.71	0.43	0.22	18.40	17.94	0.45
1983	577.7	3.51	9.38	-2.27	15.43	6.04	0.48	0.52	-0.34	13.08	14.97	-1.89
1984	579.7	-0.84	8.70	-5.94	14.77	6.07	0.52	0.44	0.17	9.84	16.03	-6.19
1985	579.2	-3.51	8.55	-8.45	14.70	6.15	0.56	0.39	0.05	10.31	18.99	-8.68
1986	577.2	-2.77	7.91	-7.82	14.05	6.14	0.48	0.48	0.31	13.36	21.48	-8.12
1987	575.6	-1.76	7.20	-6.63	13.51	6.31	0.80	0.27	0.45	14.69	22.29	-7.61
1988	574.6	1.84	6.77	-2.61	13.02	6.24	0.71	0.10	0.53	17.43	21.18	-3.75
1989	575.7	1.52	7.02	-3.17	13.47	6.45	0.81	0.09	0.63	17.51	22.03	-4.52
1990	576.5	2.89	6.44	-1.23	13.17	6.73	0.95	0.12	-0.09	17.75	19.72	-1.97
1991	578.2	2.08	5.82	-1.01	12.38	6.56	1.11	0.32	0.08	17.02	18.89	-1.87
1992	579.4	2.69	5.38	0.34	11.92	6.55	1.36	0.21	3.61	14.04	18.46	-4.42
1993	581.0	-6.15	4.37	-7.49	11.09	6.72	1.39	0.22	-2.81	11.87	17.74	-5.87
1994	577.4	-11.12	3.99	-12.05	11.04	7.05	0.99	0.22	-2.02	10.97	21.78	-10.80
1995	571.0	-11.83	3.39	-12.13	10.32	6.93	1.06	0.24	-1.39	12.26	23.83	-11.57
1996	564.3	-12.24	3.24	-14.18	10.25	7.00	1.04	0.29	-0.77	11.71	25.88	-14.17
1997	557.4	-13.21	1.98	-15.19	9.78	7.80	0.78	0.43	-0.16	12.57	27.96	-15.39
1998 PD	550.1	-12.81	1.37	-14.18	9.15	7.78	0.75	0.47	0.12	13.50	28.09	-14.58
1999 PR	543.1	-3.75	0.53	-4.27	8.81	8.29	0.80	0.50	0.72	18.75	24.04	-5.28
2000 PR	541.1	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

PRINCE EDWARD ISLAND

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory						In	Out	Net	
1972	113.0	1.3	1.0	1.0	2.0	1.1	0.2	—	—	4.2	3.4	0.9	-0.6
1973	114.3	0.9	0.9	0.7	1.9	1.0	0.3	0.1	—	4.8	4.3	0.5	-0.6
1974	115.2	1.8	0.9	1.6	1.9	1.1	0.3	0.1	—	5.2	3.8	1.4	-0.6
1975	117.0	1.2	0.9	1.0	1.9	1.1	0.2	0.1	—	4.6	3.8	0.8	-0.6
1976	118.3	1.1	0.8	0.5	1.9	1.1	0.2	—	—	4.3	4.0	0.3	-0.2
1977	119.4	1.7	0.9	0.8	2.0	1.0	0.2	—	—	3.9	3.3	0.6	—
1978	121.1	1.2	1.0	0.1	2.0	1.0	0.1	—	—	3.5	3.5	—	—
1979	122.3	1.0	0.9	—	1.9	1.0	0.3	—	—	3.4	3.6	-0.2	—
1980	123.3	0.1	0.9	-0.9	2.0	1.0	0.2	—	—	3.0	4.1	-1.1	—
1981	123.3	0.2	0.9	-0.7	1.9	1.0	0.1	—	—	3.5	4.3	-0.8	—
1982	123.5	0.9	0.9	0.1	1.9	1.0	0.2	—	—	3.4	3.4	—	-0.1
1983	124.5	1.6	0.9	0.9	1.9	1.1	0.1	0.1	—	3.3	2.5	0.8	-0.1
1984	126.1	1.3	0.8	0.6	2.0	1.1	0.1	—	—	3.1	2.5	0.5	-0.1
1985	127.4	0.9	0.9	0.1	2.0	1.1	0.1	—	—	2.8	2.8	—	-0.1
1986	128.3	0.1	0.8	-0.3	1.9	1.1	0.2	—	0.1	2.5	3.0	-0.5	-0.4
1987	128.4	0.7	0.8	0.5	2.0	1.1	0.2	—	—	3.1	2.8	0.3	-0.6
1988	129.1	0.9	0.9	0.6	2.0	1.1	0.2	—	—	3.5	3.1	0.4	-0.6
1989	130.0	0.3	0.8	0.1	1.9	1.1	0.2	—	—	3.3	3.4	-0.1	-0.6
1990	130.3	0.2	0.9	-0.1	2.0	1.1	0.2	—	—	2.8	3.1	-0.3	-0.6
1991	130.5	0.1	0.7	-0.3	1.9	1.2	0.2	0.1	—	2.9	3.3	-0.4	-0.2
1992	130.6	1.1	0.7	0.3	1.9	1.1	0.2	—	—	2.8	2.6	0.2	—
1993	131.7	1.3	0.6	0.7	1.8	1.1	0.2	—	—	2.5	1.9	0.5	—
1994	133.0	1.4	0.6	0.8	1.7	1.1	0.2	—	—	2.7	2.0	0.7	—
1995	134.4	1.1	0.6	0.6	1.8	1.2	0.2	—	0.1	2.6	2.2	0.4	—
1996	135.5	1.0	0.4	0.6	1.7	1.3	0.2	—	0.1	2.7	2.3	0.4	—
1997	136.5	0.3	0.6	-0.2	1.6	1.0	0.2	—	-0.1	2.5	2.8	-0.2	...
1998 PD	136.9	0.4	0.3	0.1	1.5	1.2	0.1	—	—	2.6	2.6	—	...
1999 PR	137.3	1.1	0.2	0.9	1.5	1.2	0.1	—	0.1	2.9	2.2	0.7	...
2000 PR	138.4	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	113.0	11.56	8.43	8.77	17.69	9.26	1.54	0.35	0.03	37.36	29.81	7.55
1973	114.3	7.96	7.55	6.00	16.44	8.89	2.38	0.58	0.03	41.96	37.79	4.17
1974	115.2	15.86	7.33	14.05	16.70	9.37	2.68	0.58	0.01	44.46	32.52	11.94
1975	117.0	10.47	7.40	8.52	16.39	8.98	2.00	0.45	0.05	39.19	32.27	6.92
1976	118.3	9.33	7.12	4.21	16.34	9.22	1.98	0.36	-0.01	36.25	33.65	2.60
1977	119.4	14.42	7.68	6.34	16.38	8.70	1.60	0.37	—	32.30	27.20	5.11
1978	121.1	9.57	8.14	1.02	16.31	8.17	1.19	0.38	—	28.62	28.42	0.21
1979	122.3	8.11	7.43	0.29	15.75	8.32	2.35	0.29	0.05	27.65	29.48	-1.83
1980	123.3	0.49	7.49	-7.40	15.88	8.39	1.53	0.24	0.08	24.58	33.36	-8.78
1981	123.3	1.74	7.33	-5.29	15.37	8.04	1.04	0.28	0.30	28.12	34.46	-6.34
1982	123.5	7.52	7.61	0.70	15.52	7.90	1.33	0.28	-0.30	27.09	27.14	-0.05
1983	124.5	12.87	6.84	6.81	15.22	8.38	0.84	0.50	0.10	26.17	19.80	6.38
1984	126.1	10.38	6.67	4.48	15.42	8.75	0.86	0.38	-0.13	24.23	20.10	4.13
1985	127.4	6.70	7.02	0.45	15.71	8.68	0.88	0.34	—	22.13	22.23	-0.10
1986	128.3	1.05	6.29	-2.28	15.02	8.74	1.31	0.23	0.48	19.45	23.29	-3.84
1987	128.4	5.68	6.52	3.68	15.18	8.67	1.23	0.09	0.20	23.96	21.62	2.34
1988	129.1	6.71	6.68	4.52	15.26	8.58	1.18	0.12	0.19	26.86	23.59	3.27
1989	130.0	2.46	6.52	0.41	14.88	8.37	1.22	0.27	0.25	25.69	26.48	-0.78
1990	130.3	1.30	6.68	-0.92	15.44	8.77	1.35	0.15	-0.03	21.73	23.82	-2.09
1991	130.5	0.93	5.34	-2.50	14.44	9.10	1.15	0.46	-0.02	22.12	25.30	-3.18
1992	130.6	8.17	5.61	2.65	14.11	8.49	1.15	0.37	0.11	21.57	19.80	1.77
1993	131.7	9.76	4.60	5.25	13.26	8.65	1.24	0.24	0.23	18.57	14.55	4.02
1994	133.0	10.62	4.50	6.21	12.84	8.33	1.20	0.28	0.10	20.17	14.98	5.19
1995	134.4	8.49	4.45	4.13	13.00	8.54	1.19	0.27	0.49	18.96	16.23	2.73
1996	135.5	7.36	3.13	4.26	12.45	9.32	1.12	0.26	0.45	20.05	17.10	2.95
1997	136.5	2.41	4.10	-1.70	11.64	7.53	1.10	0.26	-0.78	18.55	20.31	-1.76
1998 PD	136.9	3.17	2.32	0.85	10.91	8.59	0.99	0.24	0.21	19.11	19.22	-0.11
1999 PR	137.3	8.20	1.81	6.40	10.69	8.89	1.00	0.26	0.81	21.06	16.20	4.85
2000 PR	138.4	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

NOVA SCOTIA

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory						In	Out	Net	
1972	800.5	8.1	6.6	4.5	13.5	6.9	1.9	0.2	—	22.7	19.9	2.8	-3.0
1973	808.6	7.7	6.4	4.4	13.3	6.9	2.5	0.4	0.1	26.3	24.1	2.1	-3.0
1974	816.4	6.7	6.0	3.7	12.9	6.9	2.6	0.4	-0.1	27.2	25.6	1.6	-3.0
1975	823.1	9.7	6.3	6.4	13.1	6.8	2.1	0.3	0.1	25.6	21.1	4.5	-3.0
1976	832.8	5.8	5.9	2.0	12.8	7.0	1.9	0.3	-0.1	23.0	22.6	0.4	-2.0
1977	838.6	4.1	5.4	—	12.4	7.0	1.6	0.3	-0.1	19.9	21.2	-1.3	-1.3
1978	842.6	4.8	5.7	0.5	12.5	6.9	1.0	0.3	-0.1	19.5	19.6	-0.1	-1.3
1979	847.5	3.6	5.6	-0.6	12.4	6.8	1.3	0.2	0.1	18.4	20.3	-1.8	-1.3
1980	851.1	3.2	5.4	-0.8	12.4	7.0	1.6	0.1	0.2	18.5	21.0	-2.5	-1.3
1981	854.3	3.3	5.1	-0.8	12.1	7.0	1.4	0.3	0.6	19.3	21.7	-2.5	-1.0
1982	857.7	7.3	5.4	2.8	12.3	6.9	1.3	0.3	0.2	18.8	17.3	1.6	-0.8
1983	865.0	9.2	5.4	4.6	12.4	7.0	0.8	0.3	0.2	18.3	14.5	3.9	-0.8
1984	874.2	8.5	5.5	3.8	12.4	6.9	1.0	0.2	—	17.3	14.4	3.0	-0.8
1985	882.7	4.6	5.1	0.2	12.5	7.3	1.0	0.3	-0.2	16.7	16.9	-0.2	-0.8
1986	887.2	4.3	5.1	0.1	12.4	7.3	1.1	0.3	—	17.1	17.8	-0.7	-0.9
1987	891.5	3.1	5.0	-0.9	12.1	7.1	1.2	0.3	0.3	17.6	19.8	-2.2	-1.0
1988	894.6	5.8	4.8	2.0	12.2	7.4	1.3	0.2	0.8	19.2	19.1	0.1	-1.0
1989	900.4	6.5	5.0	2.5	12.5	7.5	1.5	0.3	0.7	20.4	19.8	0.6	-1.0
1990	907.0	5.4	5.5	0.8	12.9	7.4	1.6	0.5	-0.2	18.6	18.7	-0.1	-1.0
1991	912.3	5.0	4.8	1.6	12.0	7.3	1.5	0.6	-0.3	19.0	17.9	1.0	-1.4
1992	917.3	4.7	4.3	2.1	11.9	7.5	2.4	0.5	-0.2	18.1	17.8	0.4	-1.7
1993	922.0	3.5	4.0	1.2	11.6	7.6	3.0	0.4	-0.2	15.5	16.7	-1.1	-1.7
1994	925.5	1.5	3.3	-0.1	11.1	7.8	3.5	0.4	-0.4	15.1	17.8	-2.7	-1.7
1995	927.1	2.6	3.0	1.3	10.7	7.7	3.8	0.5	-0.1	15.4	17.4	-2.0	-1.7
1996	929.6	3.7	2.8	1.6	10.6	7.8	3.2	0.5	-0.1	16.0	17.1	-1.1	-0.7
1997	933.3	2.4	1.9	0.5	10.0	8.0	2.9	0.6	0.3	15.8	17.9	-2.1	...
1998 PD	935.8	1.5	1.3	0.2	9.6	8.3	2.1	0.6	0.3	15.2	16.8	-1.6	...
1999 PR	937.3	3.8	0.7	3.0	9.4	8.6	1.6	0.6	0.6	17.2	15.8	1.4	...
2000 PR	941.0	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	800.5	10.07	8.24	5.61	16.82	8.58	2.33	0.30	0.05	28.21	24.67	3.54
1973	808.6	9.52	7.83	5.44	16.36	8.53	3.14	0.46	0.17	32.31	29.72	2.59
1974	816.4	8.21	7.37	4.55	15.79	8.42	3.17	0.47	-0.08	33.15	31.23	1.92
1975	823.1	11.69	7.64	7.73	15.85	8.21	2.57	0.38	0.16	30.88	25.50	5.38
1976	832.8	6.92	7.02	2.35	15.34	8.32	2.32	0.31	-0.10	27.51	27.08	0.43
1977	838.6	4.84	6.44	-0.02	14.72	8.28	1.89	0.31	-0.08	23.69	25.21	-1.52
1978	842.6	5.74	6.71	0.60	14.85	8.14	1.16	0.33	-0.10	23.07	23.20	-0.13
1979	847.5	4.28	6.55	-0.70	14.61	8.06	1.58	0.25	0.14	21.69	23.86	-2.17
1980	851.1	3.81	6.29	-0.92	14.51	8.21	1.89	0.17	0.28	21.68	24.61	-2.92
1981	854.3	3.90	5.98	-0.88	14.11	8.13	1.64	0.33	0.69	22.51	25.39	-2.88
1982	857.7	8.52	6.25	3.21	14.31	8.06	1.46	0.29	0.20	21.87	20.03	1.85
1983	865.0	10.56	6.16	5.34	14.26	8.10	0.96	0.31	0.26	21.08	16.64	4.44
1984	874.2	9.63	6.22	4.33	14.09	7.87	1.18	0.25	0.03	19.71	16.34	3.37
1985	882.7	5.15	5.80	0.27	14.07	8.27	1.10	0.30	-0.27	18.86	19.13	-0.26
1986	887.2	4.85	5.74	0.12	13.90	8.16	1.23	0.31	0.03	19.18	20.01	-0.83
1987	891.5	3.48	5.60	-1.04	13.56	7.96	1.37	0.30	0.33	19.68	22.12	-2.44
1988	894.6	6.43	5.31	2.18	13.57	8.26	1.45	0.24	0.90	21.38	21.31	0.08
1989	900.4	7.25	5.55	2.75	13.87	8.32	1.63	0.31	0.80	22.56	21.93	0.63
1990	907.0	5.90	6.03	0.93	14.15	8.12	1.72	0.51	-0.17	20.43	20.54	-0.12
1991	912.3	5.47	5.20	1.79	13.13	7.93	1.64	0.70	-0.29	20.73	19.59	1.14
1992	917.3	5.08	4.71	2.23	12.91	8.20	2.57	0.51	-0.21	19.73	19.34	0.39
1993	922.0	3.79	4.34	1.30	12.52	8.18	3.26	0.46	-0.27	16.79	18.03	-1.24
1994	925.5	1.66	3.59	-0.09	11.98	8.39	3.74	0.48	-0.44	16.33	19.24	-2.91
1995	927.1	2.79	3.27	1.35	11.55	8.28	4.06	0.50	-0.08	16.59	18.72	-2.12
1996	929.6	3.95	3.03	1.69	11.35	8.32	3.46	0.56	-0.07	17.21	18.35	-1.14
1997	933.3	2.61	2.04	0.56	10.65	8.61	3.11	0.61	0.28	16.95	19.17	-2.22
1998 PD	935.8	1.60	1.36	0.24	10.25	8.89	2.20	0.62	0.34	16.23	17.90	-1.68
1999 PR	937.3	4.00	0.79	3.21	9.99	9.20	1.71	0.65	0.61	18.32	16.79	1.53
2000 PR	941.0	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

NEW BRUNSWICK

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory						In	Out	Net	
1972	646.3	6.2	6.8	1.2	11.8	5.0	1.3	0.4	—	18.2	17.9	0.2	-1.8
1973	652.5	8.5	6.3	4.0	11.4	5.1	1.7	0.7	0.1	22.7	19.9	2.8	-1.8
1974	661.0	10.1	6.2	5.7	11.4	5.2	2.2	0.7	—	22.9	18.7	4.2	-1.8
1975	671.1	14.0	6.6	9.2	11.8	5.2	2.1	0.6	0.1	24.2	16.6	7.6	-1.8
1976	685.2	8.1	6.6	2.9	11.8	5.2	1.8	0.5	—	18.9	17.3	1.6	-1.4
1977	693.3	5.0	6.3	-0.2	11.5	5.2	1.2	0.5	—	15.5	16.4	-0.9	-1.1
1978	698.3	3.0	5.6	-1.5	10.8	5.2	0.7	0.5	—	14.3	16.0	-1.6	-1.1
1979	701.3	3.2	5.7	-1.4	10.8	5.2	1.1	0.4	0.1	14.3	16.5	-2.2	-1.1
1980	704.6	1.2	5.3	-3.0	10.6	5.3	1.2	0.3	0.2	13.2	17.4	-4.2	-1.1
1981	705.8	0.1	5.4	-4.0	10.5	5.1	1.0	0.6	0.4	13.8	18.6	-4.8	-1.3
1982	705.9	5.9	5.3	2.1	10.5	5.2	0.8	0.6	-0.2	14.8	12.7	2.2	-1.5
1983	711.8	6.2	5.3	2.4	10.5	5.2	0.6	0.4	—	13.2	10.9	2.3	-1.5
1984	718.0	4.5	5.1	0.9	10.4	5.3	0.6	0.4	-0.1	12.0	11.2	0.8	-1.5
1985	722.5	1.9	4.9	-1.5	10.1	5.2	0.6	0.5	—	11.5	13.1	-1.6	-1.5
1986	724.4	1.2	4.3	-2.6	9.8	5.5	0.6	0.5	0.1	11.4	14.3	-2.9	-0.5
1987	725.6	3.0	4.2	-1.4	9.6	5.4	0.6	0.4	0.1	13.2	15.0	-1.8	0.2
1988	728.6	4.0	4.2	-0.4	9.6	5.5	0.7	0.4	0.6	13.7	14.9	-1.2	0.2
1989	732.5	4.8	4.2	0.5	9.7	5.5	0.9	0.5	0.1	15.0	15.0	—	0.2
1990	737.4	5.9	4.4	1.3	9.8	5.4	0.8	0.5	-0.1	14.2	13.2	1.0	0.2
1991	743.2	3.6	4.0	0.1	9.5	5.5	0.7	0.4	-0.1	12.8	12.9	-0.1	-0.6
1992	746.8	1.7	3.8	-1.0	9.4	5.6	0.8	0.5	-0.2	12.0	13.1	-1.1	-1.1
1993	748.5	1.8	3.2	-0.4	9.0	5.8	0.7	0.5	-0.1	11.0	11.5	-0.5	-1.1
1994	750.3	1.4	3.1	-0.6	9.0	5.9	0.6	0.5	-0.2	10.7	11.2	-0.5	-1.1
1995	751.6	0.7	2.6	-0.8	8.6	5.9	0.6	0.5	—	11.2	12.1	-0.9	-1.1
1996	752.3	1.2	2.3	-0.6	8.2	5.9	0.7	0.3	-0.1	11.1	12.0	-0.9	-0.5
1997	753.5	0.8	2.0	-1.2	7.9	5.9	0.7	0.2	0.1	11.4	13.2	-1.8	...
1998 PD	754.3	-0.7	1.5	-2.3	7.9	6.3	0.8	0.2	0.1	9.7	12.6	-2.9	...
1999 PR	753.6	2.1	1.1	1.1	7.7	6.6	0.7	0.2	0.5	12.3	12.2	0.1	...
2000 PR	755.7	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	646.3	9.49	10.51	1.78	18.18	7.67	2.00	0.66	0.07	28.00	27.63	0.37
1973	652.5	12.97	9.65	6.08	17.40	7.74	2.63	1.03	0.15	34.56	30.23	4.33
1974	661.0	15.19	9.37	8.55	17.18	7.81	3.31	1.05	-0.01	34.37	28.07	6.29
1975	671.1	20.67	9.79	13.56	17.38	7.59	3.09	0.84	0.15	35.63	24.46	11.17
1976	685.2	11.79	9.59	4.21	17.14	7.55	2.54	0.69	-0.03	27.47	25.09	2.38
1977	693.3	7.25	9.10	-0.31	16.55	7.45	1.66	0.70	-0.01	22.22	23.50	-1.27
1978	698.3	4.31	8.01	-2.18	15.42	7.41	0.94	0.75	-0.03	20.48	22.83	-2.35
1979	701.3	4.62	8.07	-1.94	15.43	7.36	1.63	0.57	0.16	20.29	23.44	-3.16
1980	704.6	1.76	7.57	-4.30	15.08	7.51	1.71	0.38	0.28	18.76	24.67	-5.91
1981	705.8	0.08	7.60	-5.66	14.88	7.28	1.40	0.86	0.55	19.61	26.36	-6.75
1982	705.9	8.34	7.47	2.99	14.80	7.33	1.06	0.87	-0.28	20.93	17.85	3.08
1983	711.8	8.67	7.43	3.33	14.71	7.28	0.77	0.60	-0.05	18.41	15.20	3.21
1984	718.0	6.21	7.06	1.22	14.38	7.32	0.83	0.59	-0.15	16.67	15.54	1.13
1985	722.5	2.64	6.76	-2.05	13.99	7.23	0.84	0.70	-0.04	15.94	18.09	-2.16
1986	724.4	1.67	5.97	-3.59	13.50	7.53	0.88	0.67	0.20	15.72	19.71	-4.00
1987	725.6	4.07	5.75	-1.91	13.19	7.44	0.88	0.57	0.20	18.17	20.59	-2.42
1988	728.6	5.45	5.70	-0.49	13.16	7.46	0.93	0.59	0.83	18.76	20.42	-1.66
1989	732.5	6.57	5.68	0.66	13.15	7.48	1.23	0.65	0.10	20.44	20.47	-0.03
1990	737.4	7.91	5.94	1.74	13.27	7.33	1.14	0.63	-0.14	19.13	17.76	1.37
1991	743.2	4.77	5.41	0.12	12.75	7.34	0.92	0.59	-0.10	17.24	17.35	-0.11
1992	746.8	2.28	5.06	-1.33	12.56	7.50	1.01	0.66	-0.22	16.10	17.55	-1.45
1993	748.5	2.37	4.33	-0.51	12.08	7.75	0.93	0.64	-0.15	14.73	15.39	-0.66
1994	750.3	1.83	4.08	-0.80	11.96	7.88	0.83	0.69	-0.28	14.29	14.97	-0.67
1995	751.6	0.93	3.49	-1.12	11.39	7.90	0.84	0.71	-0.01	14.90	16.14	-1.24
1996	752.3	1.58	3.03	-0.85	10.86	7.83	0.95	0.41	-0.18	14.70	15.91	-1.21
1997	753.5	1.00	2.62	-1.62	10.51	7.88	0.88	0.27	0.17	15.17	17.57	-2.40
1998 PD	754.3	-0.95	2.05	-2.99	10.47	8.42	0.99	0.23	0.14	12.85	16.74	-3.89
1999 PR	753.6	2.84	1.42	1.42	10.22	8.80	0.90	0.26	0.67	16.32	16.21	0.11
2000 PR	755.7	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

QUEBEC

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory						In	Out	Net	
1972	6,153.4	37.5	41.3	-5.0	83.6	42.3	18.6	4.4	0.7	36.2	56.0	-19.9	1.2
1973	6,190.9	49.5	41.4	7.0	84.1	42.7	26.9	6.9	1.7	39.6	54.4	-14.7	1.2
1974	6,240.4	58.3	42.9	14.3	85.6	42.8	33.5	7.0	-0.3	39.3	51.2	-11.9	1.2
1975	6,298.7	63.1	50.2	11.8	93.6	43.4	28.0	5.7	1.7	34.5	46.8	-12.3	1.2
1976	6,361.8	52.1	53.3	3.4	96.3	43.0	29.3	4.7	-0.5	31.6	52.4	-20.8	-4.6
1977	6,413.9	12.7	53.7	-32.3	97.2	43.5	19.2	4.8	-0.3	24.4	71.0	-46.5	-8.7
1978	6,426.6	18.4	51.8	-24.8	95.4	43.6	14.3	5.2	-0.5	24.5	57.9	-33.4	-8.7
1979	6,445.0	34.0	55.3	-12.7	98.6	43.3	19.5	4.0	1.8	23.6	53.7	-30.0	-8.7
1980	6,479.0	44.0	53.9	-1.2	97.4	43.5	22.5	2.7	3.3	21.9	46.2	-24.3	-8.7
1981	6,523.0	42.3	52.6	-0.2	95.3	42.7	21.2	3.6	4.8	23.6	46.1	-22.5	-10.1
1982	6,565.3	21.8	47.3	-14.3	90.8	43.5	21.3	4.7	-2.8	19.9	48.1	-28.2	-11.2
1983	6,587.1	26.5	43.9	-6.2	88.2	44.3	16.4	5.1	1.6	22.3	41.4	-19.1	-11.2
1984	6,613.6	31.9	43.4	-0.3	87.8	44.4	14.6	4.6	0.6	25.2	36.2	-10.9	-11.2
1985	6,645.5	39.4	40.6	9.9	86.3	45.7	14.9	3.5	4.6	25.4	31.4	-6.0	-11.2
1986	6,684.9	60.9	37.7	27.3	84.6	46.9	19.5	3.1	13.9	26.0	29.0	-3.0	-4.2
1987	6,745.8	61.3	36.2	24.2	83.8	47.6	26.8	2.3	7.1	26.0	33.4	-7.4	0.9
1988	6,807.1	79.3	38.8	39.6	86.6	47.8	25.8	2.1	22.9	27.8	34.8	-7.0	0.9
1989	6,886.4	75.3	44.1	30.4	92.4	48.3	34.2	2.6	7.2	29.5	37.8	-8.4	0.9
1990	6,961.7	71.7	49.6	21.2	98.0	48.4	40.8	2.7	-7.4	26.9	36.4	-9.6	0.9
1991	7,033.4	49.9	48.2	12.4	97.3	49.1	51.7	3.4	-22.8	24.5	37.6	-13.0	-10.7
1992	7,083.3	60.5	47.3	32.0	96.1	48.8	48.4	2.9	-3.6	25.5	35.3	-9.8	-18.9
1993	7,143.7	46.6	40.7	24.8	92.4	51.7	44.9	2.9	-9.8	24.5	32.0	-7.4	-18.9
1994	7,190.3	34.6	39.2	14.3	90.6	51.4	28.0	3.1	-0.3	22.7	33.0	-10.3	-18.9
1995	7,224.9	34.1	34.7	18.3	87.4	52.7	26.6	3.3	5.3	23.1	33.4	-10.2	-18.9
1996	7,259.0	30.6	32.9	5.6	85.2	52.3	29.7	7.5	-1.3	20.8	36.2	-15.4	-7.9
1997	7,289.6	23.4	25.4	-2.0	79.8	54.4	27.8	10.5	-1.7	20.4	37.9	-17.6	...
1998 PD	7,313.0	23.3	21.6	1.6	75.9	54.3	26.7	10.9	0.4	20.2	34.7	-14.5	...
1999 PR	7,336.3	24.9	19.1	5.8	73.6	54.5	29.2	11.4	1.5	22.1	35.7	-13.6	...
2000 PR	7,361.1	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	6,153.4	6.07	6.69	-0.81	13.55	6.86	3.01	0.71	0.12	5.86	9.08	-3.22
1973	6,190.9	7.97	6.66	1.13	13.52	6.86	4.32	1.10	0.27	6.38	8.75	-2.37
1974	6,240.4	9.30	6.84	2.28	13.66	6.82	5.34	1.12	-0.04	6.27	8.16	-1.89
1975	6,298.7	9.97	7.93	1.86	14.79	6.86	4.43	0.90	0.27	5.44	7.39	-1.95
1976	6,361.8	8.16	8.35	0.53	15.08	6.73	4.58	0.73	-0.07	4.95	8.20	-3.26
1977	6,413.9	1.98	8.37	-5.04	15.14	6.77	3.00	0.74	-0.04	3.80	11.05	-7.25
1978	6,426.6	2.85	8.05	-3.85	14.82	6.77	2.22	0.80	-0.07	3.80	9.00	-5.19
1979	6,445.0	5.26	8.56	-1.96	15.27	6.70	3.02	0.61	0.28	3.66	8.30	-4.65
1980	6,479.0	6.77	8.29	-0.19	14.99	6.69	3.47	0.42	0.50	3.37	7.11	-3.74
1981	6,523.0	6.46	8.04	-0.03	14.57	6.52	3.24	0.56	0.73	3.60	7.05	-3.45
1982	6,565.3	3.32	7.19	-2.17	13.81	6.61	3.24	0.72	-0.42	3.03	7.32	-4.28
1983	6,587.1	4.01	6.65	-0.94	13.36	6.71	2.48	0.77	0.24	3.39	6.28	-2.89
1984	6,613.6	4.82	6.54	-0.04	13.25	6.70	2.21	0.69	0.09	3.81	5.46	-1.65
1985	6,645.5	5.91	6.10	1.49	12.95	6.86	2.23	0.53	0.69	3.81	4.72	-0.90
1986	6,684.9	9.07	5.62	4.07	12.60	6.98	2.90	0.46	2.08	3.87	4.32	-0.45
1987	6,745.8	9.04	5.34	3.58	12.37	7.03	3.96	0.34	1.05	3.84	4.94	-1.09
1988	6,807.1	11.58	5.67	5.78	12.65	6.98	3.77	0.31	3.35	4.07	5.09	-1.02
1989	6,886.4	10.87	6.36	4.39	13.34	6.98	4.94	0.37	1.04	4.25	5.46	-1.21
1990	6,961.7	10.25	7.09	3.03	14.01	6.92	5.84	0.38	-1.05	3.84	5.21	-1.37
1991	7,033.4	7.07	6.83	1.75	13.79	6.96	7.33	0.49	-3.24	3.47	5.32	-1.85
1992	7,083.3	8.50	6.65	4.50	13.52	6.86	6.80	0.41	-0.51	3.58	4.96	-1.38
1993	7,143.7	6.50	5.68	3.46	12.89	7.22	6.27	0.41	-1.37	3.42	4.46	-1.04
1994	7,190.3	4.80	5.44	1.98	12.57	7.13	3.89	0.44	-0.05	3.15	4.57	-1.42
1995	7,224.9	4.71	4.79	2.52	12.07	7.28	3.67	0.46	0.73	3.19	4.61	-1.42
1996	7,259.0	4.21	4.52	0.77	11.72	7.19	4.08	1.02	-0.18	2.87	4.98	-2.11
1997	7,289.6	3.20	3.48	-0.27	10.93	7.45	3.80	1.44	-0.23	2.79	5.19	-2.40
1998 PD	7,313.0	3.17	2.95	0.22	10.36	7.41	3.64	1.48	0.05	2.75	4.73	-1.98
1999 PR	7,336.3	3.38	2.60	0.79	10.02	7.42	3.98	1.55	0.21	3.01	4.85	-1.84
2000 PR	7,361.1	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

ONTARIO

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory						In	Out	Net	
1972	7,906.4	107.1	66.2	60.8	125.1	58.9	63.8	12.7	1.5	97.0	88.8	8.2	-19.9
1973	8,013.5	126.4	63.9	82.4	123.8	59.9	103.2	19.6	4.1	104.2	109.4	-5.3	-19.9
1974	8,139.9	120.3	63.7	76.6	124.2	60.6	120.1	20.2	-1.2	89.5	111.7	-22.2	-19.9
1975	8,260.2	106.3	65.2	61.1	125.8	60.6	98.5	16.4	4.1	80.9	106.0	-25.1	-19.9
1976	8,366.5	91.4	62.1	46.3	122.7	60.6	72.0	13.5	-1.7	88.7	99.2	-10.5	-17.0
1977	8,457.9	96.6	61.3	50.2	122.8	61.4	56.6	13.8	-1.2	98.6	90.0	8.6	-15.0
1978	8,554.5	71.0	59.8	26.1	121.0	61.1	42.4	15.0	-1.7	86.6	86.2	0.4	-15.0
1979	8,625.5	74.4	60.2	29.2	121.7	61.5	52.0	11.5	4.0	83.5	98.9	-15.3	-15.0
1980	8,699.9	72.4	60.6	26.8	123.3	62.7	62.3	8.2	7.6	74.2	109.1	-34.9	-15.0
1981	8,772.3	94.1	59.3	41.9	122.2	62.8	55.0	11.0	17.5	80.6	100.2	-19.7	-7.2
1982	8,866.4	117.8	61.2	58.3	124.9	63.7	53.0	14.3	-0.1	89.1	69.5	19.6	-1.7
1983	8,984.2	121.0	62.3	60.3	126.8	64.5	40.0	14.3	1.7	88.2	55.4	32.8	-1.7
1984	9,105.1	128.7	66.6	63.8	131.3	64.7	41.5	12.9	-1.6	89.1	52.4	36.7	-1.7
1985	9,233.9	129.6	65.5	65.8	132.2	66.7	40.7	11.8	3.4	88.4	54.9	33.4	-1.7
1986	9,363.5	172.7	66.0	107.0	133.9	67.9	49.6	10.3	24.7	100.1	57.1	42.9	-0.3
1987	9,536.2	205.8	66.5	138.7	134.6	68.1	84.8	8.6	22.2	104.7	64.4	40.3	0.6
1988	9,741.9	234.6	67.4	166.6	138.1	70.7	89.0	7.3	70.0	91.4	76.5	14.9	0.6
1989	9,976.5	218.0	74.4	143.0	145.3	70.9	104.8	8.3	47.6	87.3	88.5	-1.2	0.6
1990	10,194.5	164.8	80.1	84.1	150.9	70.8	113.4	8.3	-6.0	75.2	90.3	-15.1	0.6
1991	10,359.2	127.0	78.6	60.6	151.5	72.9	118.8	10.7	-37.5	71.2	81.2	-10.0	-12.2
1992	10,486.2	144.4	77.4	88.4	150.6	73.2	138.2	9.1	-27.2	68.0	81.5	-13.5	-21.4
1993	10,630.6	120.2	72.0	69.6	147.8	75.9	134.3	9.3	-42.6	62.3	75.1	-12.8	-21.4
1994	10,750.8	138.7	69.6	90.6	147.1	77.5	117.3	10.0	-12.2	66.0	70.5	-4.5	-21.4
1995	10,889.5	139.5	67.8	93.1	146.3	78.5	115.6	10.5	-10.2	68.5	70.3	-1.8	-21.4
1996	11,029.0	134.8	60.9	82.8	140.0	79.1	119.8	20.2	-15.0	67.0	68.7	-1.7	-8.9
1997	11,163.8	147.3	53.5	93.9	133.0	79.5	117.9	28.4	-2.5	71.1	64.3	6.8	...
1998 PD	11,311.1	123.6	52.3	71.3	132.7	80.4	92.2	29.6	-2.8	73.4	62.0	11.5	...
1999 PR	11,434.7	142.4	45.8	96.6	129.9	84.0	104.1	31.0	6.9	80.0	63.3	16.6	...
2000 PR	11,577.2	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	7,906.4	13.45	8.31	7.64	15.71	7.40	8.02	1.59	0.18	12.19	11.16	1.03
1973	8,013.5	15.65	7.91	10.20	15.33	7.41	12.78	2.43	0.51	12.90	13.55	-0.65
1974	8,139.9	14.67	7.76	9.34	15.15	7.38	14.65	2.46	-0.14	10.91	13.62	-2.70
1975	8,260.2	12.79	7.84	7.34	15.13	7.29	11.84	1.98	0.49	9.74	12.75	-3.01
1976	8,366.5	10.86	7.38	5.51	14.59	7.21	8.56	1.60	-0.20	10.54	11.79	-1.25
1977	8,457.9	11.35	7.21	5.90	14.43	7.22	6.65	1.62	-0.14	11.59	10.58	1.01
1978	8,554.5	8.27	6.97	3.04	14.08	7.11	4.94	1.74	-0.20	10.08	10.03	0.05
1979	8,625.5	8.59	6.95	3.37	14.04	7.10	6.00	1.33	0.46	9.64	11.41	-1.77
1980	8,699.9	8.29	6.93	3.07	14.12	7.18	7.13	0.94	0.87	8.49	12.49	-4.00
1981	8,772.3	10.67	6.73	4.75	13.85	7.13	6.24	1.25	1.99	9.14	11.37	-2.23
1982	8,866.4	13.20	6.85	6.53	13.99	7.14	5.94	1.60	-0.01	9.99	7.79	2.20
1983	8,984.2	13.37	6.89	6.67	14.02	7.13	4.43	1.58	0.19	9.75	6.12	3.63
1984	9,105.1	14.04	7.26	6.96	14.32	7.06	4.53	1.40	-0.17	9.71	5.71	4.00
1985	9,233.9	13.94	7.04	7.08	14.22	7.18	4.38	1.26	0.37	9.50	5.91	3.59
1986	9,363.5	18.27	6.99	11.32	14.17	7.18	5.25	1.09	2.61	10.59	6.05	4.54
1987	9,536.2	21.35	6.90	14.38	13.97	7.07	8.80	0.89	2.30	10.86	6.68	4.18
1988	9,741.9	23.79	6.83	16.89	14.00	7.17	9.03	0.74	7.10	9.27	7.76	1.51
1989	9,976.5	21.61	7.38	14.17	14.41	7.03	10.39	0.82	4.72	8.65	8.77	-0.12
1990	10,194.5	16.03	7.79	8.18	14.69	6.89	11.04	0.80	-0.58	7.32	8.79	-1.47
1991	10,359.2	12.18	7.54	5.82	14.53	7.00	11.40	1.02	-3.60	6.83	7.79	-0.96
1992	10,486.2	13.68	7.33	8.38	14.26	6.93	13.09	0.86	-2.57	6.44	7.72	-1.28
1993	10,630.6	11.24	6.73	6.51	13.83	7.10	12.56	0.87	-3.99	5.83	7.02	-1.19
1994	10,750.8	12.82	6.43	8.37	13.59	7.16	10.84	0.92	-1.13	6.10	6.52	-0.42
1995	10,889.5	12.72	6.19	8.49	13.35	7.16	10.54	0.96	-0.93	6.25	6.41	-0.16
1996	11,029.0	12.15	5.49	7.47	12.62	7.13	10.80	1.82	-1.35	6.04	6.19	-0.15
1997	11,163.8	13.11	4.76	8.35	11.84	7.08	10.50	2.53	-0.22	6.33	5.72	0.61
1998 PD	11,311.1	10.87	4.60	6.27	11.66	7.07	8.11	2.60	-0.24	6.46	5.45	1.01
1999 PR	11,434.7	12.38	3.98	8.40	11.29	7.30	9.05	2.70	0.60	6.95	5.51	1.44
2000 PR	11,577.2	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

MANITOBA

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory						In	Out	Net	
1972	998.9	3.7	9.2	-3.3	17.4	8.2	5.3	0.9	0.1	26.1	33.8	-7.7	-2.2
1973	1,002.6	9.8	8.8	3.2	17.0	8.2	6.6	1.5	0.2	33.8	36.0	-2.2	-2.2
1974	1,012.4	7.1	8.9	0.4	17.3	8.4	7.4	1.5	-0.1	30.2	35.6	-5.4	-2.2
1975	1,019.5	8.6	8.8	2.0	17.1	8.4	7.1	1.2	0.2	28.4	32.5	-4.1	-2.2
1976	1,028.1	6.3	8.5	0.7	16.7	8.3	5.5	1.0	-0.1	25.1	28.7	-3.7	-2.9
1977	1,034.5	5.3	8.5	0.2	16.7	8.2	5.1	1.0	-0.1	21.6	25.3	-3.8	-3.4
1978	1,039.8	-2.5	8.1	-7.2	16.4	8.3	3.6	1.1	-0.1	18.7	28.2	-9.6	-3.4
1979	1,037.3	-4.9	8.0	-9.5	16.2	8.2	4.9	0.8	0.2	18.8	32.6	-13.8	-3.4
1980	1,032.4	0.3	7.6	-3.8	16.0	8.4	7.7	0.6	0.4	19.0	30.4	-11.3	-3.4
1981	1,032.8	7.7	7.4	1.5	16.1	8.6	5.4	1.0	0.7	22.7	26.3	-3.6	-1.2
1982	1,040.5	13.6	7.6	5.7	16.1	8.5	4.9	0.9	0.2	20.9	19.4	1.5	0.3
1983	1,054.1	12.7	8.1	4.2	16.6	8.5	4.0	1.1	0.4	18.5	17.5	1.0	0.3
1984	1,066.7	11.6	8.4	3.0	16.7	8.3	3.9	0.7	-0.2	17.2	17.2	—	0.3
1985	1,078.4	9.4	8.3	0.7	17.1	8.8	3.4	0.8	-0.1	17.2	19.0	-1.8	0.3
1986	1,087.7	6.9	8.1	-0.1	17.0	8.9	3.7	1.0	0.2	17.4	20.5	-3.0	-1.1
1987	1,094.6	5.2	8.2	-1.0	17.0	8.7	4.8	1.1	0.1	18.1	22.9	-4.8	-2.1
1988	1,099.8	1.7	7.9	-4.1	17.0	9.1	5.0	1.2	0.7	16.1	24.7	-8.6	-2.1
1989	1,101.5	1.3	8.5	-5.1	17.3	8.8	6.1	1.4	0.2	17.1	27.1	-10.0	-2.1
1990	1,102.8	3.4	8.5	-3.0	17.4	8.9	6.6	1.1	0.2	16.9	25.5	-8.6	-2.1
1991	1,106.3	4.0	8.3	-3.3	17.3	8.9	5.6	1.0	-0.4	16.1	23.6	-7.6	-1.0
1992	1,110.3	4.6	7.6	-2.8	16.6	9.0	5.1	1.0	-0.4	15.9	22.3	-6.4	-0.3
1993	1,114.9	5.2	7.4	-1.9	16.7	9.3	4.9	1.2	-0.4	14.6	19.8	-5.2	-0.3
1994	1,120.1	5.7	7.3	-1.4	16.5	9.1	4.1	1.2	-0.2	15.4	19.4	-4.0	-0.3
1995	1,125.8	5.0	6.5	-1.2	16.1	9.7	3.5	1.3	-0.1	15.5	18.9	-3.3	-0.3
1996	1,130.8	4.4	6.0	-1.5	15.5	9.5	3.9	1.4	-0.3	14.4	18.1	-3.7	-0.1
1997	1,135.2	1.0	5.1	-4.2	14.7	9.5	3.8	1.5	0.3	13.2	19.9	-6.7	...
1998 PD	1,136.1	3.1	4.7	-1.6	14.6	9.8	3.0	1.5	—	15.3	18.4	-3.1	...
1999 PR	1,139.2	5.4	4.2	1.3	14.3	10.2	3.7	1.6	0.6	16.3	17.7	-1.4	...
2000 PR	1,144.7	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	998.9	3.68	9.17	-3.34	17.38	8.22	5.26	0.94	0.08	26.09	33.82	-7.73
1973	1,002.6	9.71	8.70	3.15	16.84	8.14	6.57	1.47	0.23	33.53	35.71	-2.18
1974	1,012.4	7.04	8.74	0.41	17.04	8.30	7.31	1.51	-0.07	29.72	35.04	-5.32
1975	1,019.5	8.40	8.56	1.95	16.75	8.19	6.97	1.20	0.22	27.72	31.76	-4.04
1976	1,028.1	6.15	8.21	0.72	16.22	8.01	5.34	0.98	-0.10	24.30	27.84	-3.54
1977	1,034.5	5.13	8.23	0.16	16.12	7.89	4.88	0.99	-0.07	20.78	24.43	-3.65
1978	1,039.8	-2.39	7.80	-6.93	15.79	7.99	3.44	1.07	-0.10	17.97	27.18	-9.20
1979	1,037.3	-4.72	7.75	-9.20	15.69	7.94	4.74	0.81	0.21	18.14	31.48	-13.34
1980	1,032.4	0.32	7.31	-3.71	15.48	8.17	7.44	0.58	0.41	18.44	29.43	-10.98
1981	1,032.8	7.44	7.16	1.46	15.51	8.34	5.18	0.94	0.71	21.87	25.37	-3.49
1982	1,040.5	13.01	7.29	5.41	15.40	8.11	4.71	0.88	0.15	19.94	18.51	1.43
1983	1,054.1	11.93	7.62	4.01	15.66	8.04	3.75	1.04	0.40	17.44	16.54	0.90
1984	1,066.7	10.85	7.80	2.75	15.52	7.73	3.64	0.68	-0.16	16.00	16.05	-0.05
1985	1,078.4	8.63	7.70	0.63	15.79	8.08	3.15	0.78	-0.12	15.90	17.52	-1.62
1986	1,087.7	6.31	7.42	-0.11	15.59	8.17	3.44	0.92	0.16	15.97	18.75	-2.79
1987	1,094.6	4.70	7.51	-0.90	15.45	7.94	4.37	1.02	0.07	16.51	20.84	-4.33
1988	1,099.8	1.58	7.20	-3.72	15.47	8.27	4.55	1.08	0.61	14.65	22.45	-7.80
1989	1,101.5	1.21	7.71	-4.60	15.72	8.00	5.57	1.31	0.21	15.48	24.56	-9.08
1990	1,102.8	3.11	7.69	-2.68	15.71	8.02	6.01	1.02	0.14	15.31	23.11	-7.80
1991	1,106.3	3.61	7.52	-2.99	15.59	8.07	5.09	0.89	-0.35	14.48	21.32	-6.84
1992	1,110.3	4.12	6.84	-2.48	14.91	8.07	4.57	0.93	-0.35	14.31	20.08	-5.77
1993	1,114.9	4.68	6.63	-1.72	14.95	8.32	4.36	1.04	-0.38	13.06	17.72	-4.66
1994	1,120.1	5.09	6.53	-1.21	14.68	8.15	3.67	1.10	-0.20	13.68	17.25	-3.57
1995	1,125.8	4.41	5.72	-1.08	14.28	8.56	3.14	1.14	-0.11	13.75	16.71	-2.96
1996	1,130.8	3.87	5.28	-1.31	13.66	8.38	3.47	1.24	-0.23	12.68	15.97	-3.30
1997	1,135.2	0.85	4.53	-3.68	12.90	8.37	3.32	1.31	0.22	11.60	17.51	-5.91
1998 PD	1,136.1	2.74	4.17	-1.43	12.81	8.64	2.65	1.35	-0.01	13.47	16.19	-2.72
1999 PR	1,139.2	4.75	3.64	1.11	12.54	8.90	3.25	1.42	0.53	14.24	15.50	-1.26
2000 PR	1,144.7	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

SASKATCHEWAN

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory						In	Out	Net	
1972	923.1	-9.5	7.9	-16.2	15.5	7.6	1.5	0.4	—	19.5	36.8	-17.3	-1.2
1973	913.6	-6.0	7.2	-12.0	14.8	7.6	1.9	0.7	0.1	26.2	39.4	-13.3	-1.2
1974	907.5	2.7	7.3	-3.3	15.1	7.8	2.2	0.7	—	28.0	32.8	-4.8	-1.2
1975	910.3	15.3	7.6	8.9	15.3	7.7	2.8	0.6	0.1	30.0	23.4	6.6	-1.2
1976	925.6	13.0	8.2	5.6	16.0	7.8	2.3	0.5	—	26.2	22.4	3.8	-0.8
1977	938.5	10.5	9.0	2.1	16.5	7.6	2.2	0.5	—	22.2	21.8	0.4	-0.5
1978	949.1	5.6	8.8	-2.7	16.6	7.7	1.6	0.6	—	19.3	23.0	-3.7	-0.5
1979	954.7	8.0	9.6	-1.1	16.9	7.4	2.8	0.4	0.1	21.1	24.6	-3.5	-0.5
1980	962.7	8.1	9.4	-0.8	17.1	7.7	3.6	0.3	0.2	20.7	25.0	-4.4	-0.5
1981	970.8	11.1	9.7	1.7	17.2	7.5	2.4	0.5	0.3	23.2	23.7	-0.5	-0.3
1982	981.9	12.6	9.5	3.3	17.7	8.2	2.1	0.6	—	21.0	19.3	1.7	-0.2
1983	994.5	13.8	10.2	3.7	17.8	7.6	1.7	0.6	0.1	19.5	17.0	2.5	-0.2
1984	1,008.3	12.6	10.3	2.5	18.0	7.7	2.2	0.6	0.2	17.3	16.6	0.7	-0.2
1985	1,021.0	6.3	10.1	-3.6	18.2	8.0	1.9	0.8	0.3	15.8	20.8	-5.0	-0.2
1986	1,027.3	2.7	9.5	-5.2	17.5	8.1	1.9	0.4	0.4	15.9	22.9	-7.0	-1.6
1987	1,030.0	-0.4	9.2	-7.0	17.0	7.8	2.1	0.5	0.4	15.7	24.7	-9.0	-2.6
1988	1,029.6	-8.1	8.7	-14.2	16.8	8.1	2.2	0.5	0.4	13.6	30.0	-16.3	-2.6
1989	1,021.4	-10.6	8.7	-16.7	16.7	7.9	2.1	0.5	0.2	15.3	33.9	-18.6	-2.6
1990	1,010.8	-8.4	8.0	-13.9	16.1	8.0	2.4	0.4	0.1	16.1	32.0	-15.9	-2.6
1991	1,002.3	-1.2	7.2	-7.9	15.3	8.1	2.5	0.4	-0.4	17.4	26.9	-9.5	-0.5
1992	1,001.2	2.4	7.2	-5.8	15.0	7.8	2.5	0.5	-0.1	17.3	25.1	-7.7	1.0
1993	1,003.5	4.2	6.1	-2.9	14.3	8.2	2.4	0.5	-0.3	16.3	20.8	-4.5	1.0
1994	1,007.7	4.2	5.7	-2.5	14.0	8.3	2.3	0.5	-0.2	16.9	20.8	-4.0	1.0
1995	1,011.9	4.4	5.0	-1.6	13.5	8.5	1.9	0.5	0.2	16.9	20.1	-3.2	1.0
1996	1,016.3	4.3	4.5	-0.6	13.3	8.8	1.8	0.7	0.1	16.8	18.7	-1.9	0.4
1997	1,020.6	2.8	4.2	-1.5	12.9	8.6	1.8	0.9	0.3	16.7	19.4	-2.7	...
1998 PD	1,023.4	2.9	3.9	-1.0	12.8	8.9	1.6	0.9	0.1	18.7	20.5	-1.8	...
1999 PR	1,026.3	-1.4	3.5	-4.9	12.7	9.2	1.7	0.9	0.5	16.9	23.1	-6.2	...
2000 PR	1,024.8	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	923.1	-10.38	8.58	-17.62	16.85	8.26	1.65	0.49	0.05	21.22	40.05	-18.83
1973	913.6	-6.64	7.86	-13.16	16.26	8.40	2.05	0.78	0.14	28.75	43.31	-14.56
1974	907.5	3.00	8.04	-3.68	16.63	8.60	2.47	0.80	-0.03	30.81	36.13	-5.32
1975	910.3	16.66	8.27	9.73	16.63	8.36	3.09	0.64	0.14	32.66	25.52	7.14
1976	925.6	13.92	8.75	6.01	17.13	8.38	2.49	0.53	-0.05	28.15	24.05	4.10
1977	938.5	11.18	9.49	2.19	17.53	8.05	2.36	0.54	-0.03	23.52	23.11	0.41
1978	949.1	5.87	9.25	-2.88	17.39	8.14	1.64	0.59	-0.05	20.27	24.16	-3.89
1979	954.7	8.39	9.99	-1.10	17.67	7.69	2.88	0.45	0.13	22.01	25.68	-3.66
1980	962.7	8.36	9.73	-0.88	17.64	7.91	3.72	0.31	0.24	21.37	25.91	-4.53
1981	970.8	11.36	9.92	1.74	17.63	7.71	2.46	0.50	0.31	23.74	24.27	-0.53
1982	981.9	12.77	9.63	3.29	17.93	8.30	2.15	0.59	-0.03	21.29	19.53	1.76
1983	994.5	13.75	10.22	3.68	17.82	7.60	1.73	0.65	0.10	19.44	16.94	2.50
1984	1,008.3	12.46	10.16	2.46	17.75	7.60	2.12	0.57	0.19	17.08	16.36	0.72
1985	1,021.0	6.18	9.89	-3.56	17.73	7.84	1.86	0.79	0.27	15.39	20.28	-4.90
1986	1,027.3	2.63	9.19	-5.02	17.03	7.84	1.81	0.35	0.36	15.48	22.30	-6.82
1987	1,030.0	-0.42	8.96	-6.83	16.54	7.58	2.06	0.46	0.35	15.24	24.03	-8.78
1988	1,029.6	-7.93	8.45	-13.82	16.35	7.90	2.17	0.44	0.39	13.30	29.23	-15.93
1989	1,021.4	-10.46	8.59	-16.47	16.39	7.79	2.11	0.50	0.22	15.02	33.31	-18.29
1990	1,010.8	-8.39	7.99	-13.77	15.99	7.99	2.35	0.40	0.11	15.99	31.81	-15.82
1991	1,002.3	-1.18	7.19	-7.85	15.28	8.08	2.45	0.41	-0.40	17.38	26.86	-9.48
1992	1,001.2	2.35	7.19	-5.81	14.97	7.77	2.50	0.47	-0.14	17.30	25.01	-7.71
1993	1,003.5	4.15	6.07	-2.89	14.19	8.12	2.39	0.48	-0.28	16.20	20.72	-4.52
1994	1,007.7	4.19	5.67	-2.45	13.90	8.23	2.23	0.52	-0.24	16.72	20.64	-3.92
1995	1,011.9	4.32	4.93	-1.57	13.31	8.38	1.90	0.53	0.20	16.70	19.84	-3.15
1996	1,016.3	4.23	4.45	-0.62	13.06	8.61	1.79	0.69	0.12	16.48	18.32	-1.84
1997	1,020.6	2.69	4.13	-1.44	12.58	8.45	1.71	0.84	0.29	16.33	18.94	-2.61
1998 PD	1,023.4	2.84	3.77	-0.93	12.50	8.73	1.54	0.86	0.14	18.28	20.03	-1.74
1999 PR	1,026.3	-1.38	3.41	-4.79	12.38	8.97	1.68	0.92	0.53	16.50	22.57	-6.07
2000 PR	1,024.8	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January1 and Population Growth Components, Provinces and Territories, 1972-2000

ALBERTA

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory						In	Out	Net	
1972	1,680.0	30.9	18.6	11.9	29.3	10.7	8.4	3.3	0.3	60.5	54.0	6.5	0.4
1973	1,710.9	29.1	18.5	10.2	29.3	10.8	11.9	5.1	0.7	70.5	67.8	2.7	0.4
1974	1,739.9	42.6	18.6	23.7	29.8	11.3	14.3	5.3	-0.1	75.4	60.6	14.8	0.4
1975	1,782.6	56.6	20.2	36.0	31.6	11.4	16.3	4.4	0.7	76.7	53.2	23.5	0.4
1976	1,839.2	73.5	21.5	45.1	33.1	11.6	14.9	3.8	-0.2	83.5	49.3	34.2	6.9
1977	1,912.7	75.3	22.8	40.9	34.4	11.6	12.7	4.0	-0.1	82.8	50.5	32.3	11.6
1978	1,988.0	72.2	23.5	37.1	35.4	11.9	9.8	4.4	-0.2	82.6	50.6	32.0	11.6
1979	2,060.2	85.6	24.9	49.1	37.0	12.1	12.8	3.6	0.7	96.1	56.9	39.2	11.6
1980	2,145.7	102.9	27.0	64.3	39.7	12.7	18.8	2.7	1.2	106.7	59.8	46.9	11.6
1981	2,248.7	89.8	29.8	57.9	42.6	12.8	19.3	4.1	2.5	107.6	67.3	40.2	2.1
1982	2,338.5	43.8	32.1	16.4	45.0	13.0	17.9	5.1	-0.4	72.7	68.8	4.0	-4.7
1983	2,382.3	7.6	33.0	-20.7	45.6	12.6	10.7	5.2	—	45.9	72.1	-26.2	-4.7
1984	2,389.9	2.6	31.4	-24.1	44.1	12.7	10.7	4.4	0.2	39.3	69.9	-30.6	-4.7
1985	2,392.5	22.4	30.6	-3.5	43.8	13.2	9.0	4.2	1.2	49.9	59.5	-9.6	-4.7
1986	2,414.9	14.5	30.2	-11.8	43.7	13.6	9.7	3.6	2.5	49.5	69.8	-20.3	-3.9
1987	2,429.4	10.9	28.8	-14.6	42.1	13.3	12.0	3.6	4.6	45.3	72.9	-27.6	-3.3
1988	2,440.4	35.1	28.2	10.2	42.1	13.9	14.0	3.0	4.7	54.8	60.3	-5.5	-3.3
1989	2,475.5	44.6	29.5	18.4	43.4	13.9	16.2	3.1	1.9	64.7	61.3	3.4	-3.3
1990	2,520.1	51.7	28.9	26.1	43.0	14.1	18.9	3.5	-0.4	67.4	56.3	11.1	-3.3
1991	2,571.8	41.3	28.3	14.4	42.8	14.5	17.0	4.8	-3.3	61.2	55.7	5.5	-1.4
1992	2,613.1	40.7	27.4	13.5	42.0	14.7	17.7	3.7	-1.6	57.0	56.0	1.0	-0.1
1993	2,653.9	33.6	25.0	8.7	40.3	15.3	18.6	3.7	-3.7	49.7	52.0	-2.4	-0.1
1994	2,687.4	33.5	24.2	9.5	39.8	15.6	18.0	4.0	-1.8	51.0	53.7	-2.7	-0.1
1995	2,721.0	38.5	23.0	15.6	38.9	15.9	14.8	4.2	0.7	53.8	49.5	4.3	-0.1
1996	2,759.5	46.0	21.5	24.5	37.9	16.4	13.9	5.2	0.8	61.2	46.1	15.1	-0.1
1997	2,805.4	61.1	20.5	40.6	36.9	16.5	12.9	6.4	1.7	74.5	42.0	32.5	...
1998 PD	2,866.5	66.6	21.0	45.6	38.0	17.1	11.2	6.6	0.9	84.3	44.2	40.1	...
1999 PR	2,933.1	40.4	20.0	20.4	37.9	17.8	12.1	7.0	1.3	68.8	54.8	14.0	...
2000 PR	2,973.6	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	1,680.0	18.21	10.96	7.03	17.27	6.31	4.95	1.93	0.15	35.70	31.85	3.86
1973	1,710.9	16.85	10.74	5.89	16.97	6.24	6.90	2.95	0.38	40.86	39.29	1.56
1974	1,739.9	24.21	10.54	13.45	16.93	6.39	8.11	2.99	-0.08	42.82	34.41	8.41
1975	1,782.6	31.26	11.17	19.88	17.46	6.29	8.99	2.43	0.36	42.35	29.40	12.96
1976	1,839.2	39.19	11.45	24.06	17.62	6.17	7.94	2.00	-0.12	44.51	26.27	18.24
1977	1,912.7	38.60	11.69	20.97	17.64	5.95	6.51	2.05	-0.07	42.46	25.88	16.58
1978	1,988.0	35.66	11.59	18.35	17.49	5.90	4.85	2.20	-0.11	40.79	24.98	15.80
1979	2,060.2	40.69	11.84	23.35	17.60	5.76	6.08	1.69	0.32	45.71	27.06	18.65
1980	2,145.7	46.84	12.31	29.26	18.09	5.78	8.57	1.23	0.56	48.56	27.20	21.36
1981	2,248.7	39.17	13.00	25.26	18.59	5.59	8.43	1.80	1.08	46.91	29.36	17.55
1982	2,338.5	18.55	13.59	6.95	19.08	5.49	7.60	2.16	-0.18	30.81	29.13	1.68
1983	2,382.3	3.18	13.82	-8.68	19.09	5.28	4.48	2.16	—	19.23	30.23	-11.00
1984	2,389.9	1.09	13.12	-10.08	18.44	5.32	4.46	1.84	0.09	16.45	29.24	-12.79
1985	2,392.5	9.33	12.72	-1.45	18.23	5.50	3.74	1.73	0.52	20.77	24.75	-3.98
1986	2,414.9	6.00	12.46	-4.86	18.06	5.60	3.99	1.49	1.02	20.44	28.82	-8.38
1987	2,429.4	4.50	11.83	-5.98	17.29	5.47	4.92	1.47	1.90	18.60	29.94	-11.33
1988	2,440.4	14.28	11.46	4.15	17.11	5.65	5.71	1.21	1.91	22.30	24.55	-2.25
1989	2,475.5	17.85	11.81	7.35	17.36	5.55	6.49	1.24	0.75	25.89	24.54	1.35
1990	2,520.1	20.32	11.37	10.25	16.89	5.53	7.44	1.38	-0.16	26.47	22.13	4.34
1991	2,571.8	15.94	10.93	5.57	16.50	5.57	6.55	1.85	-1.26	23.61	21.49	2.13
1992	2,613.1	15.47	10.39	5.13	15.96	5.57	6.72	1.39	-0.59	21.65	21.26	0.39
1993	2,653.9	12.57	9.34	3.27	15.09	5.74	6.95	1.40	-1.40	18.60	19.48	-0.88
1994	2,687.4	12.40	8.94	3.50	14.72	5.77	6.65	1.48	-0.68	18.86	19.85	-0.99
1995	2,721.0	14.04	8.40	5.69	14.20	5.80	5.41	1.53	0.26	19.63	18.08	1.55
1996	2,759.5	16.52	7.71	8.82	13.60	5.89	5.00	1.87	0.28	22.00	16.58	5.42
1997	2,805.4	21.54	7.21	14.33	13.01	5.80	4.56	2.27	0.60	26.26	14.81	11.45
1998 PD	2,866.5	22.97	7.23	15.73	13.12	5.88	3.87	2.28	0.31	29.07	15.23	13.84
1999 PR	2,933.1	13.69	6.78	6.91	12.82	6.04	4.09	2.37	0.45	23.29	18.56	4.74
2000 PR	2,973.6	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

BRITISH COLUMBIA

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory						In	Out	Net	
1972	2,278.1	60.1	16.5	41.8	34.6	18.0	20.1	3.5	0.3	72.3	47.4	24.9	1.7
1973	2,338.1	71.8	16.3	53.8	34.4	18.1	27.9	5.5	0.8	87.1	56.6	30.5	1.7
1974	2,409.9	69.2	16.3	51.2	35.5	19.2	34.5	5.7	-0.2	84.2	61.5	22.7	1.7
1975	2,479.1	41.3	17.1	22.5	36.3	19.2	29.3	4.7	0.8	61.1	64.0	-2.9	1.7
1976	2,520.4	31.9	17.1	14.8	35.8	18.8	20.5	3.9	-0.3	59.3	60.8	-1.5	—
1977	2,552.3	43.6	18.1	26.7	36.7	18.6	15.4	4.0	-0.2	62.8	47.3	15.5	-1.2
1978	2,595.9	45.3	18.2	28.4	37.2	19.1	12.3	4.3	-0.3	65.4	44.7	20.7	-1.2
1979	2,641.2	65.2	19.2	47.3	38.4	19.2	16.6	3.4	0.8	76.6	43.4	33.2	-1.2
1980	2,706.4	83.1	20.7	63.6	40.1	19.4	24.4	2.5	1.5	80.0	39.8	40.2	-1.2
1981	2,789.6	64.7	21.6	43.7	41.5	19.9	22.1	3.2	3.3	70.4	48.8	21.6	-0.6
1982	2,854.2	34.0	22.0	12.1	42.7	20.7	19.0	4.2	-0.6	45.9	47.9	-2.0	-0.2
1983	2,888.2	37.5	23.1	14.6	42.9	19.8	14.4	4.4	0.5	43.9	39.9	4.0	-0.2
1984	2,925.7	35.2	23.2	12.1	43.9	20.7	13.2	4.9	0.4	42.0	38.5	3.5	-0.2
1985	2,960.9	27.8	21.8	6.2	43.1	21.3	12.2	4.7	1.8	42.6	45.8	-3.2	-0.2
1986	2,988.7	34.6	20.8	13.7	42.0	21.2	12.6	4.2	4.5	49.5	48.6	0.9	0.1
1987	3,023.3	59.6	20.0	39.2	41.8	21.8	18.9	3.2	5.8	60.9	43.3	17.6	0.4
1988	3,082.9	75.9	20.4	55.1	42.9	22.5	23.2	2.4	8.5	67.5	41.6	25.9	0.4
1989	3,158.8	90.1	20.8	68.9	43.8	23.0	25.3	2.8	9.0	79.4	42.0	37.4	0.4
1990	3,248.9	89.6	22.0	67.1	45.6	23.6	28.7	3.1	2.8	78.4	39.7	38.7	0.4
1991	3,338.5	85.6	21.6	59.4	45.6	24.0	32.1	3.6	-3.6	74.5	39.9	34.6	4.6
1992	3,424.1	101.4	21.5	72.2	46.2	24.6	36.7	3.3	-0.7	78.6	39.0	39.6	7.6
1993	3,525.5	103.3	20.3	75.4	46.0	25.8	45.7	3.5	-4.4	75.2	37.6	37.6	7.6
1994	3,628.9	108.7	21.1	80.0	47.0	25.9	49.0	3.7	0.2	74.5	40.1	34.4	7.6
1995	3,737.6	97.1	20.4	69.0	46.8	26.4	44.3	3.8	5.1	67.1	43.7	23.4	7.6
1996	3,834.7	88.9	18.6	67.1	46.1	27.5	52.1	5.5	2.7	62.7	44.9	17.8	3.2
1997	3,923.6	61.8	17.2	44.6	44.6	27.4	47.5	6.8	1.9	54.0	52.0	2.0	...
1998 PD	3,985.3	26.2	15.1	11.2	43.1	28.1	36.0	7.1	-0.2	46.5	64.0	-17.5	...
1999 PR	4,011.6	36.9	12.4	24.5	42.0	29.6	36.1	7.6	4.1	51.1	59.2	-8.1	...
2000 PR	4,048.4	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	2,278.1	26.02	7.17	18.10	14.97	7.81	8.71	1.53	0.13	31.34	20.54	10.80
1973	2,338.1	30.23	6.85	22.65	14.47	7.62	11.77	2.32	0.34	36.69	23.82	12.86
1974	2,409.9	28.30	6.66	20.93	14.50	7.84	14.11	2.35	-0.09	34.43	25.17	9.27
1975	2,479.1	16.54	6.85	8.99	14.51	7.66	11.71	1.89	0.32	24.46	25.60	-1.15
1976	2,520.4	12.56	6.73	5.83	14.13	7.41	8.08	1.53	-0.13	23.37	23.96	-0.59
1977	2,552.3	16.93	7.03	10.38	14.25	7.22	5.98	1.54	-0.08	24.39	18.36	6.02
1978	2,595.9	17.31	6.94	10.84	14.22	7.28	4.71	1.65	-0.12	24.98	17.07	7.90
1979	2,641.2	24.40	7.19	17.67	14.37	7.18	6.21	1.26	0.30	28.66	16.22	12.43
1980	2,706.4	30.24	7.54	23.15	14.59	7.05	8.89	0.90	0.54	29.09	14.48	14.62
1981	2,789.6	22.92	7.66	15.49	14.70	7.04	7.83	1.14	1.16	24.94	17.30	7.64
1982	2,854.2	11.83	7.68	4.23	14.89	7.21	6.62	1.46	-0.23	15.98	16.69	-0.70
1983	2,888.2	12.91	7.94	5.03	14.76	6.82	4.97	1.51	0.19	15.11	13.73	1.39
1984	2,925.7	11.95	7.89	4.12	14.92	7.03	4.48	1.67	0.12	14.27	13.08	1.19
1985	2,960.9	9.34	7.34	2.07	14.50	7.16	4.11	1.57	0.60	14.31	15.38	-1.08
1986	2,988.7	11.52	6.90	4.57	13.96	7.06	4.18	1.41	1.50	16.47	16.17	0.30
1987	3,023.3	19.53	6.55	12.85	13.70	7.14	6.20	1.04	1.92	19.95	14.18	5.77
1988	3,082.9	24.32	6.53	17.66	13.76	7.22	7.44	0.78	2.72	21.63	13.34	8.29
1989	3,158.8	28.11	6.48	21.50	13.66	7.18	7.91	0.87	2.80	24.77	13.11	11.66
1990	3,248.9	27.19	6.69	20.38	13.85	7.16	8.72	0.94	0.85	23.80	12.05	11.75
1991	3,338.5	25.33	6.40	17.56	13.49	7.09	9.49	1.08	-1.07	22.02	11.80	10.22
1992	3,424.1	29.19	6.20	20.79	13.28	7.08	10.56	0.95	-0.21	22.62	11.23	11.39
1993	3,525.5	28.89	5.66	21.09	12.87	7.20	12.78	0.97	-1.23	21.03	10.52	10.51
1994	3,628.9	29.51	5.72	21.72	12.76	7.04	13.32	0.99	0.04	20.23	10.88	9.35
1995	3,737.6	25.64	5.40	18.23	12.37	6.97	11.70	1.00	1.35	17.72	11.54	6.18
1996	3,834.7	22.92	4.80	17.30	11.89	7.10	13.42	1.41	0.70	16.17	11.58	4.59
1997	3,923.6	15.62	4.34	11.28	11.27	6.93	12.02	1.73	0.48	13.66	13.16	0.50
1998 PD	3,985.3	6.56	3.76	2.79	10.79	7.02	9.00	1.77	-0.06	11.63	16.01	-4.38
1999 PR	4,011.6	9.15	3.07	6.08	10.42	7.35	8.96	1.87	1.01	12.68	14.70	-2.02
2000 PR	4,048.4	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

YUKON

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual[1]
		Total	Natural	Migratory						In	Out	Net	
1972	19.7	1.1	0.3	0.7	0.5	0.1	0.1	—	—	2.8	2.2	0.6	0.1
1973	20.8	0.2	0.3	-0.2	0.4	0.1	0.1	0.1	—	2.3	2.6	-0.3	0.1
1974	21.0	0.6	0.4	0.1	0.5	0.1	0.1	0.1	—	2.8	2.7	0.1	0.1
1975	21.6	0.7	0.3	0.3	0.4	0.1	0.1	—	—	2.8	2.5	0.2	0.1
1976	22.3	0.3	0.3	-0.3	0.4	0.1	0.1	—	—	2.6	2.9	-0.4	0.3
1977	22.5	0.8	0.3	0.1	0.4	0.1	0.1	—	—	2.8	2.7	0.1	0.4
1978	23.4	0.6	0.4	-0.2	0.4	0.1	0.1	—	—	2.7	2.8	-0.2	0.4
1979	24.0	0.4	0.4	-0.4	0.5	0.1	0.1	—	—	2.4	2.8	-0.4	0.4
1980	24.3	0.4	0.3	-0.3	0.5	0.1	0.1	—	—	2.3	2.7	-0.4	0.4
1981	24.8	-0.6	0.4	-1.3	0.5	0.1	0.1	—	—	2.7	4.1	-1.4	0.3
1982	24.2	-0.6	0.4	-1.2	0.5	0.1	0.1	0.1	—	1.6	2.8	-1.2	0.3
1983	23.6	-0.1	0.4	-0.8	0.5	0.1	0.1	—	—	1.6	2.4	-0.8	0.3
1984	23.6	0.6	0.4	-0.1	0.5	0.1	—	—	—	1.6	1.7	-0.1	0.3
1985	24.2	0.2	0.3	-0.4	0.5	0.1	—	—	—	1.6	2.0	-0.4	0.3
1986	24.4	0.8	0.4	0.2	0.5	0.1	—	—	—	2.2	2.0	0.2	0.2
1987	25.1	0.7	0.4	0.2	0.5	0.1	0.1	—	—	2.3	2.2	0.1	0.2
1988	25.9	1.0	0.4	0.4	0.5	0.1	0.1	—	—	2.4	2.1	0.3	0.2
1989	26.8	0.7	0.4	0.1	0.5	0.1	0.1	—	—	2.3	2.3	—	0.2
1990	27.5	0.7	0.4	—	0.6	0.1	0.1	—	—	2.2	2.2	—	0.2
1991	28.2	1.2	0.5	0.6	0.6	0.1	0.1	—	—	2.4	1.9	0.5	0.2
1992	29.3	0.8	0.4	0.3	0.5	0.1	0.1	—	—	2.3	2.1	0.2	0.1
1993	30.2	-0.2	0.4	-0.7	0.5	0.1	0.1	—	—	1.6	2.4	-0.8	0.1
1994	30.0	0.3	0.3	-0.2	0.4	0.1	0.1	—	—	1.8	2.0	-0.2	0.1
1995	30.3	1.2	0.3	0.7	0.5	0.2	0.1	—	—	2.3	1.7	0.7	0.1
1996	31.5	0.6	0.3	0.3	0.4	0.1	0.1	—	—	1.9	1.7	0.2	0.1
1997	32.1	-0.2	0.4	-0.5	0.5	0.1	0.1	0.1	—	1.6	2.2	-0.6	...
1998 PD	31.9	-0.8	0.3	-1.1	0.4	0.1	0.1	0.1	—	1.5	2.6	-1.1	...
1999 PR	31.1	-0.4	0.2	-0.6	0.4	0.2	0.1	0.1	—	1.5	2.1	-0.6	...
2000 PR	30.7	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	19.7	53.78	17.17	32.32	22.25	5.08	5.72	1.92	0.15	138.94	110.57	28.37
1973	20.8	7.61	14.79	-11.34	20.10	5.31	4.31	2.97	0.19	109.42	122.29	-12.88
1974	21.0	28.53	17.91	6.53	23.27	5.36	4.70	2.73	—	130.67	126.11	4.56
1975	21.6	31.02	13.50	13.50	18.61	5.11	4.43	2.19	0.23	125.46	114.42	11.04
1976	22.3	12.72	14.51	-14.15	20.00	5.49	3.26	1.79	—	114.32	129.95	-15.62
1977	22.5	35.21	14.29	2.92	18.87	4.58	2.27	1.83	—	122.28	119.79	2.48
1978	23.4	25.49	15.14	-7.10	18.90	3.76	2.41	1.99	—	112.16	119.69	-7.53
1979	24.0	15.82	15.49	-16.81	20.75	5.26	2.86	1.37	0.21	98.53	117.04	-18.51
1980	24.3	17.11	14.18	-13.89	19.39	5.21	3.91	1.10	0.37	93.45	110.52	-17.07
1981	24.8	-22.67	16.14	-52.21	21.90	5.76	4.49	1.84	1.35	110.58	166.79	-56.21
1982	24.2	-23.20	17.01	-51.37	21.94	4.93	2.88	2.30	-1.46	67.80	118.29	-50.49
1983	23.6	-3.52	18.09	-32.96	22.88	4.79	3.09	1.44	-0.38	65.96	100.19	-34.23
1984	23.6	24.77	17.23	-3.65	21.75	4.53	1.72	0.92	0.21	66.60	71.25	-4.65
1985	24.2	8.74	14.06	-16.36	19.13	5.07	1.48	0.82	1.32	65.37	83.71	-18.34
1986	24.4	31.47	14.95	7.55	19.51	4.56	1.98	0.77	-0.89	88.50	81.27	7.23
1987	25.1	28.73	14.50	6.82	18.74	4.23	3.14	0.82	0.59	90.50	86.59	3.92
1988	25.9	36.72	14.60	14.91	19.76	5.16	2.58	0.87	-0.04	92.90	79.66	13.24
1989	26.8	24.07	14.17	2.94	17.66	3.50	3.68	0.74	1.10	85.23	86.33	-1.10
1990	27.5	23.47	15.85	0.79	19.98	4.13	2.87	1.15	—	79.89	80.82	-0.93
1991	28.2	41.36	15.79	19.83	19.76	3.97	2.92	1.36	1.63	81.78	65.15	16.63
1992	29.3	28.42	13.84	9.57	17.77	3.93	4.47	1.44	-0.67	78.45	71.22	7.22
1993	30.2	-6.41	12.79	-24.13	16.88	4.09	3.42	1.03	-1.43	54.40	79.49	-25.09
1994	30.0	9.89	10.55	-5.57	14.66	4.11	3.88	1.06	-0.27	59.35	67.47	-8.13
1995	30.3	38.62	10.13	23.70	15.22	5.08	2.82	1.10	0.74	74.72	53.48	21.24
1996	31.5	20.03	10.16	7.92	13.93	3.77	2.74	1.45	-0.13	59.93	53.17	6.76
1997	32.1	-5.99	10.96	-16.95	14.80	3.84	2.72	1.81	-0.44	50.89	68.32	-17.42
1998 PD	31.9	-26.43	8.41	-34.84	13.04	4.63	1.97	2.03	0.57	48.17	83.51	-35.35
1999 PR	31.1	-11.35	7.05	-18.40	12.19	5.14	2.46	2.20	—	48.31	66.97	-18.66
2000 PR	30.7	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

NORTHWEST TERRITORIES (Nunavut included until 1991)

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory						In	Out	Net	
1972	37.8	2.2	1.0	1.1	1.2	0.3	0.2	—	—	4.4	3.5	0.9	0.1
1973	40.0	0.8	1.0	-0.3	1.2	0.2	0.2	—	—	3.6	4.0	-0.4	0.1
1974	40.8	1.3	0.8	0.3	1.0	0.2	0.2	—	—	4.3	4.2	0.2	0.1
1975	42.1	1.6	1.0	0.6	1.2	0.2	0.2	—	—	4.3	3.9	0.4	0.1
1976	43.8	0.6	1.0	-0.6	1.2	0.2	0.2	—	—	4.1	4.9	-0.8	0.3
1977	44.4	0.4	1.0	-0.9	1.2	0.2	0.1	—	—	4.4	5.4	-1.0	0.3
1978	44.8	0.5	1.0	-0.9	1.2	0.2	0.1	—	—	3.9	4.8	-1.0	0.3
1979	45.2	0.7	1.1	-0.7	1.3	0.2	0.1	—	—	3.7	4.6	-0.8	0.3
1980	45.9	0.6	1.1	-0.8	1.3	0.2	0.1	—	—	3.4	4.3	-0.9	0.3
1981	46.5	1.8	1.1	0.3	1.3	0.2	0.1	—	—	4.2	4.1	0.2	0.3
1982	48.2	2.1	1.1	0.6	1.4	0.2	0.1	—	—	3.8	3.2	0.6	0.4
1983	50.4	1.6	1.3	—	1.5	0.2	0.1	—	—	3.4	3.4	—	0.4
1984	52.0	1.7	1.2	0.1	1.4	0.2	0.1	—	—	3.5	3.5	0.1	0.4
1985	53.6	1.0	1.2	-0.6	1.4	0.2	0.1	0.1	—	3.4	4.0	-0.6	0.4
1986	54.6	-0.1	1.3	-1.8	1.5	0.2	0.1	—	—	3.1	4.9	-1.8	0.4
1987	54.5	0.7	1.3	-1.1	1.5	0.2	0.1	—	—	3.5	4.7	-1.2	0.5
1988	55.2	1.2	1.3	-0.7	1.6	0.2	0.1	—	0.1	3.5	4.3	-0.8	0.5
1989	56.4	1.4	1.2	-0.3	1.5	0.2	0.1	0.1	—	3.7	4.1	-0.4	0.5
1990	57.8	1.9	1.4	0.1	1.6	0.2	0.1	0.1	0.1	3.8	3.8	—	0.5
1991	59.7	1.9	1.4	0.2	1.6	0.2	0.1	—	—	3.7	3.6	0.1	0.3
1992	39.1	0.5	0.7	-0.2	0.9	0.1	0.1	—	-0.1	2.9	3.1	-0.2	—
1993	39.6	0.8	0.7	—	0.8	0.1	0.1	—	—	2.6	2.6	—	—
1994	40.4	0.8	0.7	0.1	0.8	0.1	0.1	—	—	2.8	2.7	0.1	—
1995	41.2	0.4	0.7	-0.4	0.9	0.1	0.1	0.1	—	2.5	2.9	-0.4	—
1996	41.6	0.1	0.7	-0.6	0.8	0.2	0.1	0.1	—	2.4	3.0	-0.6	—
1997	41.7	-0.2	0.6	-0.8	0.7	0.1	0.1	0.1	—	2.4	3.3	-0.8	...
1998 PD	41.4	-0.4	0.6	-1.1	0.8	0.2	0.1	0.1	—	2.3	3.4	-1.1	...
1999 PR	41.0	0.6	0.6	—	0.8	0.2	0.1	0.1	—	2.7	2.7	—	...
2000 PR	41.6	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	37.8	55.93	24.84	27.64	31.83	6.99	4.86	0.31	-0.03	113.20	90.07	23.12
1973	40.0	20.58	23.62	-6.36	29.78	6.16	4.40	0.49	0.02	88.53	98.82	-10.29
1974	40.8	31.21	20.15	7.83	25.11	4.96	4.82	0.55	-0.10	104.82	101.15	3.66
1975	42.1	38.36	22.32	12.92	27.35	5.03	4.49	0.42	—	100.13	91.29	8.84
1976	43.8	13.05	22.03	-14.73	26.84	4.81	4.02	0.29	-0.11	92.98	111.31	-18.33
1977	44.4	9.60	22.25	-20.24	26.74	4.49	2.74	0.31	-0.11	98.06	120.60	-22.55
1978	44.8	10.13	22.19	-19.55	26.74	4.55	2.53	0.38	-0.11	85.59	107.18	-21.59
1979	45.2	15.22	23.64	-15.84	28.14	4.50	3.05	0.29	-0.02	81.24	99.82	-18.58
1980	45.9	12.01	23.02	-18.30	28.17	5.15	2.01	0.22	0.02	72.96	93.08	-20.12
1981	46.5	36.98	23.35	6.33	27.49	4.14	1.92	0.19	0.91	89.30	85.60	3.69
1982	48.2	43.06	22.92	13.04	27.62	4.71	2.25	0.95	0.57	76.92	65.75	11.17
1983	50.4	31.02	24.43	-0.27	29.14	4.71	1.15	0.47	-0.27	66.41	67.10	-0.68
1984	52.0	31.26	22.87	1.74	27.36	4.49	1.42	0.49	-0.15	67.14	66.18	0.97
1985	53.6	18.54	22.60	-10.55	26.56	3.96	1.31	0.98	-0.07	63.17	73.98	-10.81
1986	54.6	-1.72	23.31	-33.01	27.62	4.31	1.23	0.88	0.04	56.61	90.01	-33.39
1987	54.5	12.70	24.17	-20.52	27.76	3.59	1.31	0.42	0.07	63.92	85.41	-21.49
1988	55.2	20.77	23.93	-12.04	27.87	3.94	1.36	0.70	1.24	63.20	77.14	-13.94
1989	56.4	24.57	21.55	-5.68	25.91	4.36	1.75	1.35	0.39	65.34	71.80	-6.47
1990	57.8	33.04	23.10	1.50	26.96	3.86	1.28	0.92	1.24	63.90	64.01	-0.10
1991	59.7	38.90	28.29	3.87	33.09	4.80	2.51	0.24	-0.08	73.95	72.27	1.68
1992	39.1	13.61	18.11	-5.42	21.67	3.56	2.31	0.46	-1.68	73.22	78.81	-5.59
1993	39.6	19.39	17.31	1.03	20.86	3.55	3.43	0.75	-0.58	65.09	66.16	-1.08
1994	40.4	20.77	16.72	3.04	20.20	3.48	3.06	1.01	-0.86	68.43	66.59	1.84
1995	41.2	9.18	17.97	-9.64	21.11	3.14	2.10	1.21	0.10	60.36	70.99	-10.63
1996	41.6	1.47	15.81	-14.94	19.44	3.63	1.97	1.54	0.05	57.21	72.63	-15.42
1997	41.7	-5.51	14.08	-19.60	17.41	3.32	2.02	1.71	0.43	58.04	78.39	-20.34
1998 PD	41.4	-10.70	14.78	-25.48	18.42	3.64	1.31	1.89	0.70	56.23	81.84	-25.61
1999 PR	41.0	14.92	14.48	0.44	18.31	3.83	1.48	2.01	0.63	64.98	64.64	0.34
2000 PR	41.6	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000

NUNAVUT

NUMBERS (in thousands)

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory						In	Out	Net	
1972	...	...	...	...	...	...	...	...	...	...	...	...	...
1973	...	...	...	...	...	...	...	...	...	...	...	...	...
1974	...	...	...	...	...	...	...	...	...	...	...	...	...
1975	...	...	...	...	...	...	...	...	...	...	...	...	...
1976	...	...	...	...	...	...	...	...	...	...	...	...	...
1977	...	...	...	...	...	...	...	...	...	...	...	...	...
1978	...	...	...	...	...	...	...	...	...	...	...	...	...
1979	...	...	...	...	...	...	...	...	...	...	...	...	...
1980	...	...	...	...	...	...	...	...	...	...	...	...	...
1981	...	...	...	...	...	...	...	...	...	...	...	...	...
1982	...	...	...	...	...	...	...	...	...	...	...	...	...
1983	...	...	...	...	...	...	...	...	...	...	...	...	...
1984	...	...	...	...	...	...	...	...	...	...	...	...	...
1985	...	...	...	...	...	...	...	...	...	...	...	...	...
1986	...	...	...	...	...	...	...	...	...	...	...	...	...
1987	...	...	...	...	...	...	...	...	...	...	...	...	...
1988	...	...	...	...	...	...	...	...	...	...	...	...	...
1989	...	...	...	...	...	...	...	...	...	...	...	...	...
1990	...	...	...	...	...	...	...	...	...	...	...	...	...
1991	...	...	...	...	...	...	...	...	...	...	...	...	...
1992	22.6	0.7	0.6	-0.1	0.7	0.1	—	—	—	1.0	1.0	-0.1	0.2
1993	23.3	0.8	0.6	—	0.7	0.1	—	—	—	1.0	1.0	—	0.2
1994	24.1	0.7	0.7	-0.1	0.8	0.1	—	—	—	0.9	1.1	-0.1	0.2
1995	24.8	0.6	0.6	-0.2	0.7	0.1	—	—	—	0.8	1.1	-0.2	0.2
1996	25.4	0.4	0.6	-0.3	0.8	0.1	—	—	—	0.9	1.1	-0.2	0.1
1997	25.8	0.3	0.6	-0.3	0.7	0.1	—	—	—	0.9	1.2	-0.3	...
1998 PD	26.1	0.6	0.7	—	0.8	0.1	—	—	—	1.0	1.0	—	...
1999 PR	26.7	0.6	0.6	-0.1	0.8	0.1	—	—	—	1.0	1.0	—	...
2000 PR	27.3	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	...	...	...	...	...	...	...	...	...	...	...	...
1973	...	...	...	...	...	...	...	...	...	...	...	...
1974	...	...	...	...	...	...	...	...	...	...	...	...
1975	...	...	...	...	...	...	...	...	...	...	...	...
1976	...	...	...	...	...	...	...	...	...	...	...	...
1977	...	...	...	...	...	...	...	...	...	...	...	...
1978	...	...	...	...	...	...	...	...	...	...	...	...
1979	...	...	...	...	...	...	...	...	...	...	...	...
1980	...	...	...	...	...	...	...	...	...	...	...	...
1981	...	...	...	...	...	...	...	...	...	...	...	...
1982	...	...	...	...	...	...	...	...	...	...	...	...
1983	...	...	...	...	...	...	...	...	...	...	...	...
1984	...	...	...	...	...	...	...	...	...	...	...	...
1985	...	...	...	...	...	...	...	...	...	...	...	...
1986	...	...	...	...	...	...	...	...	...	...	...	...
1987	...	...	...	...	...	...	...	...	...	...	...	...
1988	...	...	...	...	...	...	...	...	...	...	...	...
1989	...	...	...	...	...	...	...	...	...	...	...	...
1990	...	...	...	...	...	...	...	...	...	...	...	...
1991	...	...	...	...	...	...	...	...	...	...	...	...
1992	22.6	29.79	25.56	-3.62	30.62	5.06	0.87	0.44	-0.52	41.97	45.50	-3.53
1993	23.3	34.05	25.65	1.01	30.63	4.99	1.44	0.46	-0.13	40.60	40.43	0.17
1994	24.1	28.83	26.90	-5.24	30.95	4.05	0.98	0.25	-0.29	38.77	44.47	-5.69
1995	24.8	23.77	25.61	-9.05	29.47	3.87	0.36	0.08	—	33.86	43.19	-9.33
1996	25.4	16.69	24.70	-10.55	29.43	4.73	0.39	1.25	0.04	34.90	44.64	-9.73
1997	25.8	13.09	24.07	-10.98	28.69	4.62	0.69	1.62	0.15	35.66	45.86	-10.20
1998 PD	26.1	23.11	24.77	-1.66	29.46	4.69	0.34	1.66	0.19	38.91	39.44	-0.53
1999 PR	26.7	20.76	23.79	-3.03	28.78	4.99	0.22	1.81	-0.59	37.81	38.66	-0.85
2000 PR	27.3	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A2. Nuptiality

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T. [1]	Canada
	Number of Marriages												
1978	3,841	939	6,560	5,310	45,936	67,491	8,232	7,139	18,277	21,388	194	216	185,523
1979	3,737	893	6,920	5,355	46,341	67,980	7,769	7,272	18,999	22,087	181	277	187,811
1980	3,783	939	6,791	5,321	44,848	68,840	7,869	7,561	20,818	23,830	200	269	191,069
1981	3,758	849	6,632	5,108	41,005	70,281	8,123	7,329	21,781	24,699	235	282	190,082
1982	3,764	855	6,486	4,923	38,354	71,595	8,264	7,491	22,312	23,831	225	260	188,360
1983	3,778	937	6,505	5,260	36,144	70,893	8,261	7,504	21,172	23,692	243	286	184,675
1984	3,567	1,057	6,798	5,294	37,433	71,922	8,393	7,213	20,052	23,397	212	259	185,597
1985	3,220	956	6,807	5,312	37,026	72,891	8,296	7,132	19,750	22,292	185	229	184,096
1986	3,421	970	6,445	4,962	33,083	70,839	7,816	6,820	18,896	21,826	183	257	175,518
1987	3,481	924	6,697	4,924	32,616	76,201	7,994	6,853	18,640	23,395	189	237	182,151
1988	3,686	965	6,894	5,292	33,519	78,533	7,908	6,767	19,272	24,461	209	222	187,728
1989	3,905	1,019	6,828	5,254	33,325	80,377	7,800	6,637	19,888	25,170	214	223	190,640
1990	3,791	996	6,386	5,044	32,060	80,097	7,666	6,229	19,806	25,216	218	228	187,737
1991	3,480	876	5,845	4,521	28,922	72,938	7,032	5,923	18,612	23,691	196	215	172,251
1992	3,254	850	5,623	4,313	25,841	70,079	6,899	5,664	17,871	23,749	221	209	164,573
1993	3,163	885	5,403	4,177	25,021	66,575	6,752	5,638	17,860	23,447	180	216	159,317
1994	3,318	850	5,373	4,219	24,986	66,693	6,585	5,689	18,096	23,739	169	241	159,958
1995	3,404	877	5,329	4,252	24,238	67,583	6,703	5,799	18,044	23,597	207	218	160,251
1996	3,194	924	5,392	4,366	23,968	66,208	6,448	5,671	17,283	22,834	197	206	156,691
1997	3,227	876	5,177	4,089	23,958	64,535	6,261	5,707	17,254	21,845	167	210	153,306

[1] Nunavut included.

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

Table A3.1 Age-Specific First Marriage Rates (per 1,000) for Male Cohorts, 1947-1980, Canada

Age	Year of Birth																																	
	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
	Year of 17th Birthday																																	
	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
17	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.56	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.9	1.1	1.6	1.5	2.0	2.5	3.3	3.8	4.4	4.8	4.6	4.2	4.3	4.0	3.8	3.9	3.9	3.9	4.0
18		1.4	1.6	1.7	1.7	1.8	2.2	2.3	2.7	2.6	2.7	2.8	3.3	3.6	3.9	4.4	5.9	6.6	8.3	9.3	10.7	12.6	14.6	17.8	19.0	20.0	21.2	18.4	17.9	17.2	16.9	17.8	18.1	18.3
19			4.2	4.6	5.0	5.1	5.2	5.8	6.5	7.1	7.4	8.0	8.2	9.0	10.0	11.0	13.0	16.0	19.0	21.8	24.2	27.6	31.3	35.2	39.6	42.8	45.9	46.7	42.4	41.7	39.8	41.0	44.2	44.6
20				8.8	8.9	10.0	10.8	10.5	12.4	13.8	15.1	16.5	16.8	17.0	19.4	21.4	23.8	28.0	33.6	38.6	42.5	47.3	51.2	56.3	59.0	67.7	73.4	77.5	79.7	73.7	73.6	73.4	77.4	82.8
21					15.0	16.1	18.0	18.7	18.9	21.1	23.1	26.6	29.0	28.7	29.4	32.2	36.7	40.3	45.7	52.2	58.0	64.1	68.1	71.6	75.5	78.2	90.9	94.6	103.6	110.6	110.3	114.0	120.1	127.6
22						22.9	23.7	26.6	27.7	28.2	30.6	34.9	38.3	40.5	41.2	41.6	45.5	50.4	54.5	59.0	65.7	69.2	75.9	78.4	79.1	81.7	86.0	96.2	104.1	112.1	120.1	118.3	130.3	140.0
23							31.2	33.7	35.7	36.6	37.7	39.9	45.3	50.6	50.7	51.9	53.1	55.3	60.6	63.7	64.6	69.7	72.7	76.9	76.4	77.6	79.5	81.6	90.6	95.5	104.0	111.9	110.1	130.7
24								38.9	40.8	43.9	44.8	45.0	48.5	51.6	57.1	57.2	57.9	57.5	59.3	63.4	64.5	65.3	66.2	68.0	69.7	69.2	68.6	69.3	70.6	77.9	82.7	87.5	92.7	92.8
25									44.8	47.8	48.5	49.7	49.4	51.1	54.5	59.0	60.4	58.5	56.8	57.0	59.6	60.2	57.8	59.0	60.5	60.4	59.1	58.2	59.1	58.6	63.7	65.5	69.1	71.9
26										47.2	47.2	49.6	49.6	48.9	48.9	51.4	55.0	55.3	53.8	49.5	49.8	52.4	50.1	49.9	50.8	50.0	48.7	47.8	46.4	47.4	46.3	49.1	50.3	53.0
27											44.2	45.2	45.8	46.1	44.3	44.8	45.8	49.2	48.2	46.6	44.4	42.8	44.2	42.7	40.6	40.8	40.8	39.8	38.6	37.3	37.2	36.6	38.2	39.0
28												40.8	41.3	41.2	40.1	38.6	39.3	39.3	42.5	40.9	39.0	36.3	34.6	35.9	34.5	33.8	33.1	32.4	31.6	30.6	30.2	30.1	28.6	29.5
29													36.5	35.8	35.7	34.0	33.7	33.1	33.8	35.3	34.2	32.8	30.7	28.8	29.9	28.6	28.0	26.6	26.5	25.4	24.1	22.8	22.8	22.4
30														30.6	29.9	30.0	28.9	28.3	28.3	27.4	29.1	28.2	26.6	25.0	23.7	23.4	22.7	22.2	21.1	20.3	19.9	18.9	18.3	17.8
31															25.0	24.5	24.9	23.9	23.1	22.9	22.8	23.3	22.1	21.1	20.0	17.6	18.5	18.0	17.4	16.3	15.7	15.2	14.3	13.9
32																20.7	20.4	20.3	19.5	19.0	19.0	18.2	18.4	18.0	17.5	15.8	14.6	14.9	14.8	13.1	12.9	12.1	11.7	11.0
33																	16.8	16.6	16.1	15.7	15.6	14.8	15.1	15.0	14.4	13.9	12.9	11.7	11.8	11.3	10.9	10.0	9.5	9.2
34																		13.7	14.1	13.7	12.9	12.6	12.1	11.9	12.6	11.9	11.6	10.2	9.3	9.5	8.8	8.6	7.9	7.8
35																			11.8	11.8	11.1	10.7	10.0	10.0	9.7	9.9	9.7	9.6	8.6	7.5	7.7	7.4	6.7	6.4
36																				9.7	8.9	8.9	8.3	8.4	8.2	8.0	7.9	8.0	7.3	7.1	6.5	6.2	5.7	5.5
37																					7.9	7.4	7.2	6.9	6.5	6.3	6.4	6.6	6.6	6.1	5.4	5.0	4.6	4.4
38																						6.3	6.1	5.9	5.8	5.5	5.3	5.0	5.3	5.1	5.0	4.7	3.9	3.5
39																							5.0	5.2	4.9	4.6	4.5	4.4	4.3	4.0	4.3	4.3	3.7	3.7
40																								4.4	4.2	4.1	3.9	3.5	3.3	3.2	3.4	3.5	3.4	3.3
41																									3.2	3.5	3.3	3.0	2.9	2.6	2.7	2.4	3.0	2.8
42																										3.0	2.7	2.7	2.5	2.3	2.3	2.2	2.3	2.4
43																											2.5	2.2	2.1	2.0	1.9	1.8	1.7	1.9
44																												1.8	1.9	1.7	1.7	1.7	1.7	1.7
45																													1.6	1.7	1.5	1.4	1.2	1.3

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A3.2 Age-Specific First Marriage Rates (per 1,000) for Female Cohorts, 1948-1982, Canada

Age	Year of Birth																																		
	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948
	Year of 15th Birthday																																		
	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963
15	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	0.6	0.6	0.5	0.6	0.6	1.1	2.0	2.4	2.4	2.7	3.5	3.4	3.3	3.5	3.5	3.2	3.3	3.4	3.4	4.1	4.2
16		0.6	0.6	0.9	1.0	1.1	1.3	1.5	1.6	1.8	2.0	2.2	2.4	3.0	3.6	3.9	4.6	4.9	5.8	6.5	7.7	9.1	11.2	13.7	15.6	17.1	18.2	17.3	17.7	16.7	15.7	16.5	16.8	17.6	19.5
17			1.7	2.1	2.4	2.6	2.8	3.1	3.8	4.7	4.6	4.9	5.5	6.0	7.5	8.3	9.5	10.9	12.5	15.0	16.8	19.3	23.2	26.9	32.4	35.3	38.9	40.9	39.2	40.6	38.6	39.7	40.8	41.0	44.8
18				7.6	8.3	9.2	9.6	10.5	11.0	13.3	15.3	16.1	16.6	18.1	21.6	24.1	25.4	29.3	33.7	38.0	44.0	48.5	53.1	60.0	66.4	75.5	79.8	84.5	89.5	82.8	82.7	82.0	81.7	84.5	88.0
19					14.5	15.3	17.2	18.8	18.3	21.2	23.5	26.3	29.4	31.5	32.5	37.5	40.2	43.4	48.3	54.8	61.6	68.0	71.8	77.0	82.8	88.3	97.8	102.8	111.2	115.5	109.3	108.7	108.6	110.3	116.5
20						22.5	24.6	26.5	28.7	29.3	31.5	36.0	41.1	45.5	46.1	48.0	50.7	56.6	59.6	64.7	72.8	77.9	83.6	86.4	89.2	92.9	93.3	104.3	111.1	118.0	125.2	121.8	121.5	126.1	132.8
21							31.6	33.9	37.3	38.9	40.0	42.4	47.6	54.6	57.8	59.8	60.1	61.7	67.2	71.4	72.4	78.4	80.4	85.0	85.9	87.6	86.8	87.1	97.5	104.1	112.3	120.5	123.1	126.7	134.6
22								39.0	41.9	45.3	47.8	48.5	51.4	56.6	64.0	65.4	66.4	64.8	67.2	70.2	71.0	71.5	73.1	75.7	75.5	76.4	73.6	74.4	74.9	82.1	85.9	91.3	96.3	96.9	105.8
23									47.3	50.5	52.1	54.1	54.8	58.1	62.5	67.2	67.3	67.3	65.2	63.3	66.6	66.0	64.4	65.1	64.3	63.9	62.4	59.9	60.4	58.7	63.7	65.5	68.0	71.0	70.6
24										52.9	53.4	57.6	56.1	56.0	57.8	59.7	65.3	65.0	62.6	59.0	56.8	57.8	56.3	53.9	53.3	50.9	50.9	48.3	46.2	45.7	44.8	48.6	48.8	49.1	49.9
25											52.0	53.8	55.0	54.7	53.4	54.5	54.9	57.6	56.9	54.9	50.8	47.5	48.4	45.8	42.8	41.6	40.7	39.6	37.1	35.6	35.1	34.4	35.7	35.4	35.1
26												48.6	48.2	49.0	48.3	45.6	45.3	47.0	48.7	46.2	43.9	39.2	38.1	38.8	36.1	34.1	32.4	30.8	29.3	28.4	26.9	27.3	26.4	26.5	25.3
27													42.0	42.0	41.3	40.7	37.6	37.9	38.3	39.6	36.2	35.3	32.0	29.6	29.3	28.2	26.0	25.2	23.9	23.7	21.5	21.0	20.4	19.9	19.6
28														35.2	35.0	33.1	31.9	30.9	31.4	30.4	31.4	29.5	27.5	25.3	22.1	22.7	22.0	20.2	19.2	18.2	17.5	16.4	15.9	15.2	14.7
29															28.9	27.2	27.1	26.0	25.8	24.4	24.0	24.8	23.3	22.2	19.7	17.2	17.8	16.8	15.9	15.3	14.5	13.6	12.6	12.2	11.8
30																22.7	22.1	21.7	20.5	20.0	19.9	19.1	19.6	18.9	16.8	15.3	13.8	14.1	13.6	12.2	11.7	11.2	10.6	9.7	9.3
31																	17.3	17.3	16.7	16.1	16.0	15.5	14.5	15.2	14.0	13.2	11.4	10.4	10.5	10.3	9.5	8.8	8.5	7.7	7.4
32																		14.1	13.8	14.0	13.4	12.5	12.1	11.8	12.0	11.1	10.2	9.1	7.8	8.2	7.8	7.5	7.0	6.4	6.1
33																			11.6	11.2	11.1	10.2	10.1	9.9	9.4	9.1	8.8	8.1	7.2	6.5	6.7	6.4	5.8	5.4	5.4
34																				9.2	9.0	9.1	8.3	8.5	8.1	7.9	7.5	6.9	6.3	5.7	5.4	5.4	5.1	4.5	4.3
35																					7.5	7.2	7.3	7.0	6.6	6.4	6.3	6.1	5.7	5.4	5.1	4.2	4.2	3.9	3.6
36																						6.2	5.9	5.7	5.3	5.1	4.8	5.1	4.8	4.6	4.4	3.8	3.4	3.3	2.9
37																							5.0	4.8	4.6	4.2	4.2	4.0	3.7	3.8	3.7	3.5	3.2	2.6	2.5
38																								3.9	4.0	3.8	3.2	3.6	3.3	3.1	2.8	3.1	2.8	2.5	2.3
39																									3.3	3.2	3.0	2.8	2.8	2.6	2.6	2.6	2.6	2.2	2.1
40																										2.5	2.8	2.5	2.4	2.2	2.3	2.2	2.0	2.0	2.0
41																											2.2	1.9	1.8	1.8	1.9	1.7	1.7	1.6	1.6
42																												1.9	1.7	1.7	1.6	1.4	1.6	1.5	1.5
43																													1.4	1.4	1.4	1.4	1.2	1.3	1.1
44																														1.2	1.2	1.1	1.0	1.2	0.9
45																															1.1	1.1	1.0	0.9	0.8

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A4. Divorce

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[2]	Canada
	Number of Divorces												
1981	569	187	2,285	1,334	19,193	21,680	2,399	1,932	8,418	9,533	75	66	67,671
1986	687	199	2,609	1,729	19,026	27,549	2,982	2,479	9,556	11,299	94	95	78,304
1989	1,005	248	2,527	1,649	19,829	31,298	2,912	2,460	8,237	10,658	82	93	80,998
1990	1,016	281	2,419	1,699	20,474	28,977	2,798	2,364	8,489	9,773	81	92	78,463
1991	912	269	2,280	1,652	20,274	27,694	2,790	2,240	8,388	10,368	67	86	77,020
1992	867	227	2,304	1,633	19,695	30,463	2,657	2,325	8,217	10,431	117	98	79,034
1993	930	227	2,376	1,606	19,662	28,903	2,586	2,239	8,612	10,889	94	102	78,226
1994	933	249	2,286	1,570	18,224	30,718	2,746	2,354	8,174	11,437	97	92	78,880
1995	982	260	2,294	1,456	20,133	29,352	2,677	2,320	7,599	10,357	112	94	77,636
1996	1,060	237	2,228	1,450	18,078	25,035	2,603	2,216	7,509	10,898	115	99	71,528
1997	822	243	1,983	1,373	17,478	23,629	2,625	2,198	7,185	9,692	101	79	67,408
1998	944	279	1,933	1,473	16,916	25,149	2,443	2,246	7,668	9,827	117	93	69,088
	Mean Duration of Marriage for Persons Divorced in the Year[1]												
1981	11.8	12.4	11.3	11.8	11.8	11.9	11.0	10.5	10.5	11.7	11.2	9.0	11.5
1986	11.7	12.5	11.3	11.8	11.5	11.7	11.1	10.7	10.9	12.1	11.8	10.9	11.5
1989	11.7	11.5	11.3	11.5	11.0	11.3	10.3	10.8	11.0	11.5	11.5	10.5	11.2
1990	11.3	11.9	11.3	11.1	10.8	11.2	10.5	10.6	11.0	11.5	11.4	10.1	11.1
1991	11.4	12.8	11.0	11.4	11.0	10.9	10.3	10.8	10.8	11.3	11.1	9.0	11.0
1992	10.9	12.0	11.2	11.0	10.7	10.9	10.4	10.6	10.8	11.1	10.7	9.3	10.9
1993	11.7	11.8	10.9	11.5	10.5	10.8	10.4	10.6	10.6	10.9	10.6	10.0	10.7
1994	11.3	12.4	11.0	11.1	10.6	10.6	10.4	10.5	10.6	10.7	10.8	10.7	10.7
1995	11.2	12.1	11.1	11.5	10.4	10.8	10.5	10.6	10.8	10.6	10.1	10.1	10.7
1996	11.3	12.2	11.3	11.5	10.4	11.0	10.5	10.6	10.5	10.6	10.2	10.0	10.8
1997	12.0	11.7	11.4	11.4	10.7	10.9	10.5	10.3	10.7	10.7	11.0	9.4	10.9
1998	12.1	12.7	11.6	11.4	10.4	10.9	10.5	10.7	10.9	10.8	10.9	10.7	10.8

[1] Excludes divorces for marriages of a duration greater than 25 years.
[2] Nunavut included.
Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A5. Duration-Specific Divorce Rate (per 10,000), Canada, Marriage Cohorts 1948-1949 to 1997-1998

Year	Number of Marriages per Year	Marriage Cohort	Cohort Marriages	Marriage Duration (in years)																										Year of Observation	T.D.R.[1]
				0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
1949	124,087	1948-49	125,103																					50	58	56	52	60	58	1974	2,670
1950	125,083	1949-50	124,585																				51	60	55	58	59	68	64	1975	2,932
1951	128,408	1950-51	126,746																			51	64	61	59	60	73	69	71	1976	3,072
1952	128,474	1951-52	128,441																		53	65	63	62	63	74	74	76	69	1977	3,063
1953	131,034	1952-53	129,754																	54	69	70	64	67	75	80	76	69	55	1978	3,108
1954	128,629	1953-54	129,832																50	74	64	62	71	86	82	78	75	70	62	1979	3,180
1955	128,029	1954-55	128,329															57	73	65	68	69	85	85	83	75	70	68	65	1980	3,275
1956	132,713	1955-56	130,371														59	83	71	73	77	87	90	90	89	78	74	69	72	1981	3,525
1957	133,186	1956-57	132,950													67	82	76	75	78	92	105	96	87	85	84	75	75	66	1982	3,653
1958	131,525	1957-58	132,356												61	79	81	81	83	91	101	97	92	84	82	78	77	72	63	1983	3,518
1959	132,722	1958-59	132,124											68	91	82	80	86	96	105	103	92	89	80	77	84	77	68	67	1984	3,304
1960	130,338	1959-60	131,530										70	93	95	91	97	111	111	110	100	95	90	84	90	87	76	67	64	1985	3,118
1961	128,475	1960-61	129,407									73	97	95	95	97	119	119	116	108	100	95	95	95	94	81	78	64	80	1986	3,908
1962	129,381	1961-62	128,928								71	105	99	106	103	121	133	123	115	108	97	96	98	106	88	78	71	83	91	1987	4,788
1963	131,111	1962-63	130,246							71	114	113	112	114	131	133	134	124	118	104	99	108	105	91	86	79	88	102	81	1988	4,139
1964	138,135	1963-64	134,623						68	106	109	113	124	142	136	140	128	126	114	110	113	109	100	92	83	101	111	93	76	1989	3,996
1965	145,519	1964-65	141,827					61	98	112	121	134	150	153	153	139	134	124	117	118	115	104	97	92	104	123	92	83	76	1990	3,841
1966	155,596	1965-66	150,558				42	93	112	128	143	156	162	163	148	137	130	123	121	115	113	101	93	108	124	104	91	84	72	1991	3,707
1967	165,879	1966-67	160,738			31	68	102	126	139	166	177	171	155	145	136	131	132	128	118	106	94	112	132	114	97	85	78	69	1992	3,786
1968	171,766	1967-68	168,823		17	49	75	115	142	162	183	173	165	156	151	137	138	137	117	109	97	116	133	112	108	92	81	81	67	1993	3,768
1969	182,183	1968-69	176,975	3	22	53	83	122	158	182	184	171	165	160	153	148	146	133	112	103	121	139	118	106	98	89	82	73	68	1994	3,800
1970	188,428	1969-70	185,306	3	25	55	92	151	177	192	192	176	174	165	163	159	139	127	112	121	147	118	113	100	94	85	76	71	70	1995	3,761
1971	191,324	1970-71	189,876	4	28	61	106	161	186	189	191	184	180	173	166	151	132	115	129	151	121	113	101	93	90	84	81	77	62	1996	3,463
1972	200,470	1971-72	195,897	4	33	74	117	174	193	196	197	191	188	186	169	145	126	145	159	131	122	111	98	97	83	87	80	72	64	1997	3,270

Year	Number of Marriages per Year	Marriage Cohort	Cohort Marriages	Marriage Duration (in years)																										Year of Obser-vation	T.D.R.[1]
				0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
1973	199,064	1972-73	199,767	5	36	83	129	181	203	212	211	206	204	180	155	135	152	175	138	126	111	103	99	93	89	83	74	71	67	1998	3,399
1974	198,824	1973-74	198,944	5	44	94	136	184	213	227	229	218	189	168	146	160	184	149	129	111	106	104	97	87	89	78	70	70			
1975	198,085	1974-75	198,455	6	52	104	147	199	224	242	233	214	185	163	171	196	150	139	130	110	110	102	93	90	82	77	70				
1976	193,343	1975-76	195,714	8	59	111	161	217	251	246	227	194	165	195	207	165	152	131	119	113	112	103	98	86	80	76					
1977	187,344	1976-77	190,344	8	63	116	162	227	250	240	208	180	200	225	181	158	143	125	117	113	105	100	88	82	77						
1978	185,523	1977-78	186,434	7	65	123	175	235	250	221	200	230	248	196	175	155	135	130	116	107	107	90	80	82							
1979	187,811	1978-79	186,667	8	58	132	185	226	226	211	252	274	211	185	164	148	140	126	118	114	97	88	85								
1980	191,069	1979-80	189,440	7	65	135	176	206	210	268	297	227	207	184	165	148	142	131	118	105	92	92									
1981	190,082	1980-81	190,576	8	71	133	154	190	269	316	250	218	189	179	161	150	134	129	110	105	96										
1982	188,360	1981-82	189,221	9	65	118	144	260	326	263	232	216	190	177	160	153	135	119	104	103											
1983	184,675	1982-83	186,518	8	64	109	209	322	273	247	219	197	183	172	158	140	128	111	109												
1984	185,597	1983-84	185,136	8	63	150	270	263	253	237	209	202	184	171	151	135	117	112													
1985	184,096	1984-85	184,847	8	72	212	249	260	251	226	219	201	187	170	146	123	122														
1986	175,518	1985-86	179,807	10	103	217	265	263	246	237	222	203	182	163	143	140															
1987	182,151	1986-87	178,835	20	106	216	251	255	251	235	218	196	171	149	140																
1988	187,728	1987-88	184,940	19	106	214	248	254	243	237	216	175	158	150																	
1989	190,640	1988-89	189,184	19	109	208	265	268	256	231	193	170	168																		
1990	187,737	1989-90	189,189	17	113	230	272	270	257	213	181	178																			
1991	172,251	1990-91	179,994	19	120	232	276	274	232	205	200																				
1992	164,573	1991-92	168,412	21	121	242	270	246	216	212																					
1993	159,317	1992-93	161,945	22	132	236	246	228	221																						
1994	159,958	1993-94	159,638	22	129	222	230	241																							
1995	160,251	1994-95	160,105	20	113	203	241																								
1996	156,691	1995-96	158,471	16	106	218																									
1997	153,306	1996-97	154,999	16	112																										
1998	151,577	1997-98	152,442	15																											

[1] Total Divorce Rate.

Sources: Statistics Canada, Health Statistics Division and Demography Division, Population Estimates Section.

Table A6. Births and Fertility

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.	Nvt.	Canada
	Live Births													
1986	7,618	1,928	12,358	9,788	84,634	133,882	17,009	17,513	43,744	41,967	483	830	677	372,431
1987	7,468	1,955	12,110	9,588	83,791	134,617	16,953	17,034	42,110	41,814	478	843	680	369,441
1988	6,435	1,977	12,182	9,617	86,612	138,066	17,030	16,763	42,055	42,930	521	853	702	375,743
1989	7,026	1,937	12,533	9,667	92,373	145,338	17,321	16,651	43,351	43,769	480	819	660	391,925
1990	6,787	2,014	12,870	9,824	98,048	150,923	17,352	16,090	43,004	45,617	556	902	682	404,669
1991	7,166	1,885	12,016	9,497	97,310	151,478	17,282	15,304	42,776	45,612	568	911	723	402,533
1992	6,918	1,850	11,874	9,389	96,146	150,593	16,590	15,004	42,039	46,156	529	852	702	398,643
1993	6,421	1,754	11,568	9,049	92,391	147,848	16,709	14,269	40,292	46,026	508	834	725	388,394
1994	6,339	1,716	11,099	8,978	90,578	147,068	16,480	14,038	39,796	46,998	442	824	756	385,114
1995	5,859	1,754	10,726	8,563	87,417	146,263	16,113	13,499	38,914	46,820	470	874	739	378,016
1996	5,747	1,694	10,573	8,176	85,226	140,012	15,478	13,300	37,851	46,138	443	815	747	366,200
1997	5,416	1,591	9,952	7,922	79,774	133,004	14,655	12,860	36,905	44,577	474	723	745	348,598
1998	4,994	1,504	9,595	7,885	75,856	132,618	14,461	12,777	37,905	43,072	396	681	667	342,418
	Age-Specific Fertility Rates (per 1,000)													
1996: 15-19	23.6	29.8	28.0	26.8	16.3	19.9	40.0	39.5	28.2	19.1	32.7	60.0	153.4	22.1
20-24	63.7	79.8	72.1	76.7	72.1	57.7	92.3	96.9	79.2	65.0	87.0	137.0	203.8	68.4
25-29	92.0	121.0	100.8	102.4	118.4	104.4	120.4	129.9	115.3	99.2	96.8	111.4	170.2	109.1
30-34	63.0	84.2	74.4	65.1	81.7	94.4	89.5	81.3	87.6	85.3	76.9	93.0	87.3	87.0
35-39	16.4	29.1	24.6	18.8	27.3	38.4	30.8	26.7	32.5	34.8	33.3	37.5	45.6	32.6
40-44	1.9	2.4	3.3	2.3	3.9	6.1	5.4	3.9	5.0	6.1	7.2	10.6	10.8	5.1
45-49	—	0.6	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.8	—	2.0	0.2
1997: 15-19	22.6	29.0	23.7	25.4	15.5	17.1	36.2	37.3	25.8	17.4	31.4	55.2	136.4	20.0
20-24	59.2	76.1	68.6	76.0	67.0	53.7	85.4	94.7	75.3	59.5	90.5	117.5	214.6	64.0
25-29	90.6	111.9	98.0	101.2	111.7	98.8	115.8	123.4	112.5	94.3	115.1	103.2	165.5	103.8
30-34	61.5	75.7	71.4	64.6	79.6	91.5	87.2	79.4	84.9	83.2	82.8	79.6	98.1	84.5
35-39	17.3	27.3	24.4	17.1	26.6	38.1	33.2	27.0	32.4	35.7	37.2	41.3	48.7	32.5
40-44	2.2	6.1	3.1	2.4	3.9	6.3	4.7	4.0	5.6	6.0	7.7	7.6	8.6	5.2
45-49	0.2	—	0.2	—	0.1	0.2	0.3	0.4	0.1	0.3	—	—	—	0.2
1998: 15-19	20.4	29.7	23.9	26.4	14.9	17.2	38.7	38.0	25.4	16.1	28.7	54.9	137.4	19.8
20-24	57.8	72.6	65.8	71.7	63.7	54.6	85.3	94.0	76.1	58.2	88.5	109.8	187.3	63.2
25-29	83.2	99.6	94.3	103.9	108.4	97.5	115.6	121.2	110.6	91.1	85.9	97.3	126.9	101.6
30-34	61.7	75.1	71.1	65.1	77.2	92.0	85.8	79.1	90.7	82.4	72.0	90.6	92.4	84.6
35-39	17.1	29.9	24.3	20.5	26.3	38.6	32.9	26.4	32.8	35.5	38.4	36.2	41.8	32.8
40-44	2.3	4.3	3.6	2.2	4.1	6.4	4.3	4.0	5.3	5.9	7.2	3.8	10.3	5.2
45-49	0.1	0.2	0.1	0.2	0.1	0.3	0.2	0.3	0.2	0.2	—	1.6	—	0.2

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.	Nvt.	Canada
	Fertlity Rates by Birth Order (per 1,000 women)													
1996: 1	17.4	19.9	19.2	18.6	19.4	20.3	22.3	20.3	20.1	20.2	22.4	26.0	32.8	20.0
2	13.9	16.6	15.1	14.5	15.8	17.1	16.8	16.9	17.7	15.6	14.9	21.6	27.9	16.4
3	4.0	7.8	6.0	5.5	6.2	6.8	8.4	9.3	7.9	5.9	6.1	11.3	20.0	6.7
4	1.1	2.9	1.6	1.4	1.8	2.1	3.5	3.8	2.8	1.9	2.6	5.7	15.1	2.1
5 +	0.3	1.2	0.8	0.5	0.8	1.1	2.7	2.8	1.8	0.9	1.3	3.4	21.0	1.2
1997: 1	17.0	19.5	18.1	18.4	18.4	19.0	20.9	19.3	19.4	19.0	21.3	23.2	32.3	18.9
2	12.9	15.1	14.5	14.3	14.9	16.3	16.4	16.3	16.9	15.2	18.1	19.6	27.4	15.7
3	3.9	7.6	5.4	4.9	5.6	6.4	7.9	9.0	7.2	5.5	7.2	9.5	19.4	6.2
4	0.9	1.7	1.6	1.4	1.7	1.9	3.2	3.8	2.7	1.7	2.8	4.7	14.9	2.0
5 +	0.5	1.2	0.7	0.5	0.8	1.0	2.7	2.8	1.8	0.8	1.2	4.1	21.2	1.1
1998: 1	16.2	17.6	17.4	18.1	17.8	18.8	20.8	19.2	19.8	18.4	17.5	22.4	29.0	18.6
2	12.3	15.2	14.2	14.9	14.5	16.2	15.6	16.3	16.8	14.7	17.2	16.6	24.7	15.5
3	3.6	6.9	5.2	4.9	5.0	6.3	7.9	8.6	7.4	5.3	5.9	10.9	16.1	6.0
4	0.8	2.2	1.5	1.3	1.5	1.9	3.5	3.6	2.6	1.6	2.1	5.0	13.0	1.9
5 +	0.4	0.8	0.7	0.5	0.8	1.0	2.7	2.8	1.7	0.8	0.8	4.2	17.8	1.1
	Total Fertlity Rate (women aged 15-49)[1]													
1986	..	1.79	1.59	1.53	1.38	1.60	1.83	2.03	1.86	1.62	1.95	2.85	..	1.60
1987	..	1.83	1.56	1.51	1.37	1.58	1.83	1.99	1.83	1.62	1.90	2.86	..	1.58
1988	..	1.86	1.57	1.53	1.43	1.60	1.85	2.00	1.85	1.65	2.00	2.94	..	1.61
1989	..	1.84	1.63	1.56	1.53	1.64	1.92	2.06	1.92	1.66	1.87	2.73	..	1.67
1990	..	1.94	1.68	1.59	1.64	1.68	1.95	2.08	1.90	1.70	2.19	2.83	..	1.72
1991	1.44	1.86	1.59	1.55	1.65	1.67	1.97	2.04	1.90	1.69	2.15	2.47	3.55	1.71
1992	1.40	1.85	1.59	1.56	1.67	1.69	1.93	2.04	1.88	1.68	1.93	2.30	3.37	1.71
1993	1.32	1.76	1.57	1.53	1.64	1.67	1.97	1.98	1.82	1.64	1.89	2.23	3.43	1.68
1994	1.34	1.73	1.54	1.55	1.64	1.67	1.97	1.97	1.82	1.64	1.73	2.23	3.51	1.68
1995	1.28	1.79	1.52	1.51	1.61	1.67	1.95	1.91	1.79	1.61	1.82	2.34	3.41	1.66
1996	1.30	1.73	1.52	1.46	1.60	1.61	1.89	1.89	1.74	1.55	1.67	2.25	3.37	1.62
1997	1.27	1.63	1.45	1.43	1.52	1.53	1.81	1.83	1.68	1.48	1.82	2.02	3.36	1.55
1998	1.21	1.56	1.42	1.45	1.47	1.53	1.81	1.82	1.71	1.45	1.60	1.97	2.98	1.54

[2] Number of children per woman.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A7. Age-Specific Fertility and Total Fertility Rates by Birth Order and Age of Mother for Quebec and Rest of Canada[1], 1986-1998

Birth Order	Year	15-19		20-24		25-29		30-34		35-39		40-44		45-49		Total Fertility Rate		
		Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Canada
1	1986	13.01	21.16	47.20	46.09	49.85	48.42	17.49	20.57	4.42	5.03	0.50	0.66	0.03	0.02	0.66	0.71	0.70
	1988	13.92	20.89	48.52	44.40	54.18	49.81	19.25	22.18	4.71	6.05	0.69	0.77	0.03	0.02	0.71	0.72	0.72
	1989	14.86	22.29	51.09	45.59	57.95	50.49	21.45	23.55	5.19	6.29	0.64	0.85	0.05	0.02	0.76	0.75	0.75
	1990	15.66	22.94	53.49	45.75	60.65	52.95	23.54	25.20	5.64	6.87	0.66	0.89	0.02	0.02	0.80	0.77	0.78
	1991	14.93	23.67	52.62	44.41	61.47	51.22	24.25	24.97	6.20	6.99	0.73	0.93	0.01	0.04	0.80	0.76	0.77
	1992	15.08	22.89	49.24	42.46	60.41	51.41	24.80	26.05	6.10	7.31	0.78	0.99	0.02	0.01	0.78	0.76	0.76
	1993	14.69	22.31	47.70	41.73	56.78	50.70	24.75	27.02	6.29	7.70	0.86	1.11	0.01	0.04	0.76	0.75	0.75
	1994	14.89	22.30	46.99	40.74	54.50	50.84	24.57	27.99	6.55	7.94	0.89	1.19	0.02	0.04	0.74	0.76	0.75
	1995	14.29	21.92	45.30	40.07	53.94	49.35	25.42	28.95	6.52	8.37	1.00	1.23	0.04	0.05	0.73	0.75	0.74
	1996	13.89	19.72	44.88	37.41	54.54	48.17	25.23	28.70	6.93	8.86	0.87	1.33	0.04	0.05	0.73	0.72	0.72
	1997	13.15	17.50	41.36	34.93	52.00	46.22	25.15	28.22	6.98	8.84	0.99	1.38	0.03	0.04	0.70	0.69	0.69
	1998	12.48	17.56	39.28	35.45	51.31	44.84	24.93	28.72	7.07	9.04	1.04	1.36	0.03	0.05	0.68	0.69	0.68
2	1986	1.66	3.88	18.89	27.32	46.14	47.64	25.15	30.68	5.71	8.16	0.67	0.81	0.04	0.01	0.49	0.59	0.57
	1988	1.78	3.77	19.66	25.57	44.19	45.26	27.17	31.47	6.76	9.27	0.83	1.12	0.04	0.02	0.50	0.58	0.56
	1989	1.93	4.08	20.75	25.33	45.51	45.00	28.66	32.44	7.05	9.63	0.73	1.10	0.01	0.03	0.52	0.59	0.57
	1990	2.21	4.16	21.96	24.99	49.14	44.74	31.51	33.89	7.97	10.15	0.91	1.20	0.04	0.02	0.57	0.60	0.59
	1991	2.10	4.32	22.29	24.48	48.52	43.82	32.14	33.28	7.80	10.40	0.88	1.20	0.02	0.04	0.57	0.59	0.58
	1992	2.36	4.59	22.23	24.30	49.69	43.77	33.40	34.89	8.69	10.76	0.94	1.41	0.01	0.04	0.59	0.60	0.60
	1993	2.31	4.52	22.42	23.33	48.47	42.35	33.95	34.19	8.77	11.23	1.11	1.43	0.02	0.04	0.59	0.59	0.59
	1994	2.28	4.46	22.00	22.90	48.59	41.70	34.86	34.92	9.22	11.67	1.07	1.53	0.02	0.04	0.59	0.59	0.59
	1995	2.36	4.20	21.30	22.54	45.56	40.07	34.77	35.82	9.64	11.96	1.19	1.59	0.01	0.05	0.57	0.58	0.58
	1996	2.12	3.65	20.93	21.25	44.22	38.35	34.19	35.82	10.41	12.71	1.26	1.70	0.01	0.05	0.57	0.57	0.57
	1997	2.09	3.44	19.59	20.05	41.85	36.83	33.53	35.09	10.04	12.97	1.17	1.83	0.03	0.07	0.54	0.55	0.55
	1998	2.23	3.33	19.24	19.86	41.07	36.17	33.25	35.43	10.11	13.36	1.29	1.84	0.03	0.07	0.54	0.55	0.55
3	1986	0.18	0.48	3.39	7.49	13.12	19.28	12.26	17.67	4.30	6.05	0.57	0.74	0.01	0.03	0.17	0.26	0.23
	1988	0.18	0.48	3.58	7.24	12.43	18.31	12.20	17.88	4.07	6.74	0.52	0.84	0.04	0.03	0.17	0.26	0.23
	1989	0.22	0.49	4.30	7.28	13.91	17.81	13.86	18.44	4.61	7.09	0.65	0.96	0.01	0.02	0.19	0.26	0.24
	1990	0.17	0.50	4.53	7.19	15.09	17.30	15.14	18.36	5.20	7.25	0.58	0.91	0.03	0.02	0.20	0.26	0.24
	1991	0.19	0.51	4.64	7.11	15.13	16.92	15.73	18.54	5.44	7.19	0.68	0.92	0.01	0.03	0.21	0.26	0.24
	1992	0.24	0.60	5.01	7.09	15.49	16.46	16.64	17.98	5.63	7.31	0.81	0.94	0.02	0.03	0.22	0.25	0.24
	1993	0.25	0.56	5.36	7.00	15.03	15.50	16.07	17.68	5.58	7.16	0.73	0.97	0.01	0.04	0.22	0.24	0.24
	1994	0.29	0.57	5.30	7.07	15.57	15.10	16.17	16.96	5.85	7.31	0.82	1.06	0.01	0.02	0.22	0.24	0.24
	1995	0.33	0.54	5.31	6.69	14.93	14.53	16.06	16.66	5.97	7.41	0.80	1.09	0.03	0.04	0.22	0.23	0.23
	1996	0.24	0.54	5.14	6.46	14.58	13.75	15.82	16.20	6.04	7.47	0.84	1.10	0.04	0.04	0.21	0.23	0.22
	1997	0.17	0.44	4.77	6.12	13.33	12.75	14.82	15.39	5.77	7.38	0.74	1.12	0.02	0.04	0.20	0.22	0.21
	1998	0.18	0.41	4.16	5.85	11.69	12.93	13.05	15.16	5.61	7.40	0.83	1.11	0.03	0.04	0.18	0.21	0.21

Birth Order	Year	15-19		20-24		25-29		30-34		35-39		40-44		45-49		Total Fertility Rate		
		Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Canada
4	1986	0.02	0.03	0.48	1.49	2.40	5.19	3.33	5.97	1.70	2.83	0.37	0.49	0.02	0.02	0.04	0.08	0.07
	1988	0.02	0.05	0.55	1.50	2.41	4.97	3.07	5.79	1.69	2.91	0.43	0.49	0.03	0.03	0.04	0.08	0.07
	1989	0.01	0.05	0.58	1.59	2.61	4.90	3.65	6.14	1.68	3.07	0.35	0.57	—	0.03	0.04	0.08	0.07
	1990	—	0.04	0.76	1.67	2.80	4.77	3.95	6.03	2.24	3.11	0.35	0.54	0.02	0.02	0.05	0.08	0.07
	1991	0.01	0.05	0.82	1.68	3.23	4.73	4.18	6.04	2.11	3.21	0.37	0.49	—	0.03	0.05	0.08	0.07
	1992	0.03	0.06	0.92	1.71	3.15	4.61	4.37	5.89	2.20	3.03	0.42	0.53	0.01	0.01	0.06	0.08	0.07
	1993	0.02	0.05	0.83	1.61	3.11	4.41	4.54	5.74	2.24	3.17	0.45	0.56	0.02	0.02	0.06	0.08	0.07
	1994	0.02	0.06	1.14	1.64	3.51	4.40	4.81	5.58	2.52	3.05	0.49	0.57	—	0.02	0.06	0.08	0.07
	1995	0.03	0.06	1.06	1.64	3.56	4.43	4.65	5.30	2.38	3.18	0.48	0.56	0.02	0.02	0.06	0.08	0.07
	1996	0.02	0.07	0.97	1.64	3.86	4.03	4.52	5.18	2.45	3.08	0.40	0.64	0.03	0.02	0.06	0.07	0.07
	1997	0.04	0.04	1.02	1.55	3.23	3.89	4.26	4.71	2.37	3.00	0.50	0.59	0.02	0.03	0.06	0.07	0.07
	1998	—	0.04	0.72	1.49	3.19	3.84	4.08	4.79	2.13	2.87	0.46	0.60	0.01	0.03	0.05	0.07	0.06
5 +	1986	—	—	0.09	0.37	0.68	1.82	1.29	2.86	1.07	2.14	0.36	0.72	0.02	0.06	0.02	0.04	0.03
	1988	—	—	0.09	0.38	0.63	1.72	1.31	2.98	1.18	2.11	0.40	0.68	0.02	0.05	0.02	0.04	0.03
	1989	—	—	0.13	0.41	0.77	1.77	1.60	2.88	1.30	2.15	0.35	0.63	—	0.04	0.02	0.04	0.03
	1990	0.01	0.01	0.15	0.44	0.77	1.91	1.51	2.92	1.30	2.27	0.39	0.67	0.03	0.05	0.02	0.04	0.04
	1991	—	—	0.14	0.42	0.80	1.93	1.62	2.98	1.38	2.25	0.37	0.64	0.04	0.05	0.02	0.04	0.04
	1992	—	0.01	0.21	0.42	0.97	1.99	1.69	2.98	1.32	2.29	0.38	0.68	0.01	0.04	0.02	0.04	0.04
	1993	—	0.01	0.17	0.45	0.95	1.96	1.80	2.93	1.48	2.22	0.47	0.65	0.01	0.05	0.02	0.04	0.04
	1994	—	0.01	0.19	0.49	1.16	2.01	1.81	2.93	1.39	2.21	0.46	0.67	0.01	0.03	0.03	0.04	0.04
	1995	—	—	0.20	0.47	1.08	2.04	1.91	2.83	1.63	2.33	0.47	0.70	0.03	0.05	0.03	0.04	0.04
	1996	—	—	0.21	0.48	1.23	1.98	1.94	2.75	1.50	2.22	0.57	0.71	0.05	0.05	0.03	0.04	0.04
	1997	—	—	0.21	0.42	1.30	1.84	1.85	2.66	1.43	2.30	0.48	0.71	0.02	0.05	0.03	0.04	0.04
	1998	—	—	0.26	0.43	1.16	1.87	1.90	2.78	1.38	2.17	0.51	0.69	0.03	0.06	0.03	0.04	0.04
All Orders	1986	14.86	25.56	70.05	82.75	112.18	122.34	59.52	77.75	17.20	24.22	2.48	3.43	0.12	0.14	1.38	1.68	1.60
	1988	15.90	25.19	72.39	79.08	113.84	120.07	63.00	80.31	18.41	27.08	2.87	3.90	0.15	0.15	1.43	1.68	1.61
	1989	17.03	26.91	76.85	80.20	120.75	119.96	69.22	83.46	19.82	28.23	2.72	4.11	0.08	0.15	1.53	1.72	1.67
	1990	18.06	27.66	80.88	80.04	128.43	121.68	75.65	86.40	22.35	29.65	2.89	4.21	0.15	0.12	1.64	1.75	1.72
	1991	17.22	28.56	80.52	78.09	129.16	118.61	77.91	85.82	22.93	30.05	3.03	4.19	0.09	0.20	1.65	1.73	1.71
	1992	17.72	28.14	77.60	75.98	129.71	118.23	80.89	87.79	23.94	30.69	3.33	4.55	0.08	0.13	1.67	1.73	1.71
	1993	17.26	27.45	76.48	74.12	124.34	114.92	81.11	87.55	24.36	31.49	3.63	4.72	0.07	0.18	1.64	1.70	1.68
	1994	17.46	27.40	75.61	72.85	123.34	114.05	82.21	88.39	25.52	32.18	3.73	5.02	0.06	0.16	1.64	1.70	1.68
	1995	17.01	26.73	73.17	71.41	119.06	110.42	82.81	89.56	26.13	33.26	3.94	5.17	0.13	0.21	1.61	1.68	1.66
	1996	16.27	23.99	72.13	67.24	118.42	106.28	81.69	88.64	27.33	34.34	3.94	5.47	0.17	0.20	1.60	1.63	1.62
	1997	15.45	21.42	66.95	63.08	111.72	101.53	79.61	86.08	26.58	34.50	3.88	5.63	0.11	0.22	1.52	1.56	1.55
	1998	14.90	21.34	63.67	63.09	108.41	99.65	77.22	86.87	26.29	34.84	4.13	5.60	0.12	0.25	1.47	1.56	1.54

[1] Excluding Newfoundland before 1991.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A8. Mortality

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]	Canada
	Deaths												
1981	3,230	992	6,958	5,139	42,684	62,838	8,648	7,523	12,823	19,857	141	196	171,029
1986	3,540	1,121	7,255	5,458	46,892	67,865	8,911	8,061	13,560	21,213	113	235	184,224
1987	3,629	1,115	7,112	5,408	47,616	68,119	8,710	7,808	13,316	21,814	108	197	184,952
1988	3,591	1,112	7,412	5,450	47,771	70,679	9,100	8,100	13,894	22,546	136	220	190,011
1989	3,718	1,089	7,516	5,496	48,305	70,907	8,819	7,920	13,854	22,997	95	249	190,965
1990	3,884	1,143	7,388	5,426	48,420	70,818	8,863	8,044	14,068	23,577	115	227	191,973
1991	3,798	1,188	7,255	5,469	49,121	72,917	8,943	8,098	14,451	23,977	114	237	195,568
1992	3,798	1,114	7,544	5,609	48,824	73,206	8,980	7,793	14,679	24,615	117	256	196,535
1993	3,890	1,145	7,559	5,806	51,711	75,853	9,299	8,164	15,338	25,764	123	260	204,912
1994	4,050	1,114	7,770	5,917	51,366	77,487	9,148	8,308	15,613	25,939	124	241	207,077
1995	3,935	1,153	7,687	5,938	52,734	78,479	9,658	8,495	15,895	26,375	157	227	210,733
1996	3,928	1,268	7,751	5,896	52,336	79,099	9,497	8,765	16,391	27,536	120	272	212,859
1997	4,318	1,030	8,044	5,944	54,399	79,541	9,511	8,637	16,452	27,412	123	258	215,669
	Infant Deaths (age less than 1 year)												
1981	98	25	139	114	807	1,073	191	203	452	424	8	28	3,562
1986	65	13	104	81	604	969	157	157	393	355	12	28	2,938
1987	59	13	90	67	594	888	142	155	315	359	5	19	2,706
1988	70	14	79	69	563	910	132	140	347	362	3	16	2,705
1989	64	12	73	69	632	985	115	134	325	360	2	24	2,795
1990	70	12	81	71	612	946	138	123	346	344	4	19	2,766
1991	56	13	69	58	578	953	111	126	285	298	6	20	2,573
1992	49	3	71	59	522	886	113	110	304	286	2	26	2,431
1993	50	16	82	65	529	922	118	115	268	264	4	15	2,448
1994	52	11	67	48	506	878	115	125	294	297	1	23	2,417
1995	46	8	52	41	477	870	123	123	274	280	6	21	2,321
1996	38	8	59	40	396	802	104	112	236	237	0	19	2,051
1997	28	7	44	45	444	728	110	114	178	210	4	16	1,928

[1] Nunavut included.

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

Table A9. Life Expectancy at Different Ages (Triennial Tables), Canada, 1971 to 1997

Year	1971	1976	1981	1986	1991	1995	1996	1997[1]
	Males							
0	69.58	70.47	72.03	73.29	74.61	75.21	75.45	75.78
1	70.00	70.49	71.82	72.92	74.14	74.71	74.92	75.22
5	66.25	66.71	67.99	69.05	70.25	70.80	71.01	71.31
10	61.43	61.86	63.10	64.14	65.32	65.86	66.07	66.37
15	56.58	56.99	58.22	59.23	60.40	60.93	61.14	61.44
20	51.97	52.39	53.57	54.52	55.66	56.16	56.36	56.66
25	47.40	47.83	48.95	49.85	50.96	51.43	51.63	51.93
30	42.72	43.15	44.26	45.12	46.24	46.70	46.88	47.16
35	38.04	38.46	39.53	40.40	41.53	41.98	42.16	42.42
40	33.42	33.83	34.85	35.69	36.86	37.31	37.47	37.71
45	28.96	29.34	30.28	31.07	32.22	32.70	32.84	33.07
50	24.71	25.08	25.92	26.62	27.73	28.17	28.31	28.52
55	20.75	21.10	21.83	22.42	23.43	23.84	23.96	24.15
60	17.11	17.45	18.06	18.54	19.44	19.75	19.86	20.03
65	13.87	14.17	14.65	15.01	15.81	16.02	16.09	16.25
70	11.05	11.26	11.66	11.90	12.55	12.69	12.73	12.87
75	8.62	8.78	9.07	9.22	9.71	9.77	9.79	9.92
80	6.59	6.72	6.92	6.99	7.36	7.33	7.31	7.38
85	5.04	5.17	5.22	5.20	5.53	5.41	5.36	5.45
90	3.92	4.30	3.95	3.82	4.28	4.07	3.94	4.00
	Females							
0	76.58	77.79	79.16	79.99	80.96	81.12	81.21	81.39
1	76.77	77.71	78.83	79.54	80.43	80.55	80.62	80.79
5	73.00	73.89	74.97	75.66	76.52	76.63	76.70	76.87
10	68.13	69.00	70.06	70.72	71.58	71.69	71.76	71.92
15	63.23	64.09	65.13	65.79	66.64	66.74	66.81	66.98
20	58.40	59.25	60.27	60.91	61.75	61.85	61.92	62.08
25	53.55	54.40	55.40	56.02	56.86	56.95	57.01	57.18
30	48.71	49.54	50.54	51.14	51.97	52.05	52.12	52.28
35	43.91	44.71	45.69	46.27	47.11	47.18	47.25	47.40
40	39.19	39.96	40.90	41.45	42.29	42.35	42.41	42.57
45	34.56	35.30	36.21	36.72	37.52	37.60	37.66	37.81
50	30.06	30.80	31.64	32.12	32.89	32.94	32.99	33.14
55	25.72	26.43	27.24	27.67	28.39	28.42	28.46	28.58
60	21.58	22.25	23.02	23.40	24.07	24.09	24.11	24.21
65	17.66	18.30	19.02	19.35	19.97	19.95	19.96	20.07
70	14.04	14.64	15.31	15.57	16.13	16.08	16.08	16.17
75	10.81	11.36	11.95	12.13	12.60	12.53	12.51	12.60
80	8.07	8.54	9.01	9.15	9.52	9.41	9.36	9.43
85	5.93	6.36	6.66	6.68	6.98	6.82	6.77	6.84
90	4.45	4.95	4.95	4.86	5.07	4.90	4.82	4.86

[1] Calculated by using the average of deaths in 1996 and twice those of 1997.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and Analysis Section.

Table A10. Landed Immigrants in Canada by Country of Birth, 1981-1999

	1981	1986	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
ASIA	**50,894**	**42,291**	**115,240**	**123,414**	**143,048**	**149,835**	**143,252**	**130,534**	**145,483**	**139,741**	**102,203**	**113,306**
China	9,789	4,173	14,475	20,977	22,407	19,721	23,350	20,966	24,986	24,747	22,701	31,050
South Korea	1,504	1,203	2,082	2,608	3,787	3,817	3,015	3,507	3,250	4,108	4,891	7,208
Hong Kong[1]	4,040	4,303	23,743	16,587	28,260	27,320	33,729	24,878	24,143	17,807	6,348	2,801
India	9,427	7,453	12,592	14,305	14,302	21,751	18,568	18,266	23,383	21,710	16,903	18,831
Iran	1,409	2,128	3,985	6,688	7,103	4,172	3,010	4,076	6,255	7,889	6,996	6,200
Iraq	305	316	815	996	2,174	3,317	2,251	2,414	2,771	2,573	1,869	2,037
Lebanon	1,043	2,419	12,969	12,221	6,664	4,804	2,725	2,165	1,894	1,466	1,347	1,566
Pakistan	823	629	2,149	2,780	3,750	4,512	4,402	4,665	8,559	12,178	8,423	9,575
Philippines	5,986	4,199	12,603	12,730	13,803	20,548	19,492	15,818	13,626	11,411	8,540	9,518
Sri Lanka	368	1,827	3,458	7,158	12,941	9,479	7,085	9,361	6,442	5,342	3,537	4,938
Taiwan	705	638	3,590	4,295	7,077	9,379	7,005	7,416	12,739	12,785	6,946	5,314
Vietnam	8,241	6,219	9,311	8,892	7,857	8,390	6,505	4,176	2,711	2,004	1,826	1,622
Others	7,254	6,784	13,468	13,177	12,923	12,625	12,115	12,826	14,724	15,721	11,876	12,646
EUROPE	**44,817**	**22,446**	**51,115**	**46,890**	**43,627**	**45,702**	**38,069**	**40,297**	**39,198**	**37,944**	**37,287**	**38,694**
Germany	2,075	1,342	1,610	1,574	1,411	1,659	1,364	1,589	1,761	1,560	1,652	1,909
Bosnia-Hercegovina	—	—	—	—	345	2,744	4,720	4,187	2,469	2,211	2,491	2,425
France	1,681	1,113	2,002	2,631	3,114	3,351	2,522	3,036	2,437	2,310	2,999	3,177
Great Britain	18,920	4,605	7,072	6,443	5,920	5,953	4,770	4,566	4,381	3,921	3,266	3,769
Greece	927	548	608	626	597	539	341	246	238	209	143	158
Ireland	851	477	800	639	490	418	317	227	260	225	173	166
Italy	2,058	782	1,073	782	671	696	533	505	486	465	369	389
Poland	4,094	5,271	16,787	15,801	11,938	6,943	3,572	2,452	2,167	1,792	1,511	1,368
Portugal	3,292	2,449	7,747	5,858	2,747	1,706	819	815	711	698	431	349
Romania	1,004	997	2,971	2,599	3,313	3,786	3,595	4,342	3,952	4,048	3,082	3,571
Russia	—	—	—	1	160	892	1,414	2,078	3,150	4,221	4,733	4,374
Ukraine	—	—	3	6	114	867	1,436	1,825	2,667	2,638	2,744	2,821
Others	9,915	4,862	10,442	9,930	12,807	16,148	12,666	14,429	14,519	13,646	13,693	14,218

	1981	1986	1990	1991	1992	1993	1994	1995	1996	1997	1998	1998
AFRICA	**5,915**	**5,172**	**13,895**	**16,634**	**20,239**	**17,560**	**14,214**	**15,498**	**15,847**	**15,309**	**14,447**	**16,406**
South Africa	1,238	795	1,005	947	1,139	1,668	2,464	1,475	1,352	1,763	1,405	1,429
Algeria	128	111	508	913	852	751	649	1,113	2,042	1,795	2,251	2,363
Egypt	767	630	2,522	1,941	1,640	1,660	2,320	2,718	2,374	2,043	1,298	1,245
Ethiopia	152	991	2,419	2,569	2,275	1,921	1,270	950	1,042	811	655	744
Somalia	9	58	1,158	3,269	5,553	3,658	1,730	2,078	1,428	1,158	1,384	1,598
Others	3,621	2,587	6,283	6,995	8,780	7,902	5,781	7,164	7,609	7,739	7,454	9,027
NORTH AND CENTRAL AMERICA	**10,183**	**12,381**	**13,137**	**19,095**	**18,835**	**14,425**	**8,773**	**7,268**	**8,551**	**7,927**	**6,853**	**7,827**
United States	8,695	6,090	5,134	5,323	5,975	6,481	5,154	4,330	5,053	4,403	4,142	4,910
Mexico	397	673	1,204	1,150	1,200	1,153	786	764	1,247	1,689	1,383	1,683
Others	1,091	5,618	6,799	12,622	11,660	6,791	2,833	2,174	2,251	1,835	1,328	1,234
CARRIBEAN AND BERMUDA	**8,805**	**8,864**	**11,821**	**13,109**	**15,234**	**16,752**	**10,070**	**10,091**	**9,395**	**8,234**	**6,391**	**6,803**
Haiti	3,704	1,727	2,378	2,851	2,432	3,688	2,124	2,036	1,977	1,657	1,312	1,444
Jamaica	2,688	4,663	5,030	5,132	6,058	6,117	3,950	3,641	3,307	2,870	2,260	2,362
Trinidad and Tobago	949	921	2,829	2,982	4,348	4,215	2,342	2,584	2,205	1,760	1,196	1,186
Others	1,464	1,553	1,584	2,144	2,396	2,732	1,654	1,830	1,906	1,947	1,623	1,811
SOUTH AMERICA	**6,126**	**6,528**	**8,618**	**10,515**	**10,314**	**9,554**	**7,954**	**7,518**	**6,020**	**5,590**	**4,897**	**5,571**
Guyana	3,024	3,975	2,892	3,370	3,059	3,549	4,272	3,974	2,392	1,841	1,275	1,387
Others	3,102	2,553	5,726	7,145	7,255	6,005	3,682	3,544	3,628	3,749	3,622	4,184
AUSTRALASIA	**1,024**	**451**	**728**	**743**	**931**	**1,017**	**741**	**676**	**695**	**626**	**514**	**579**
OCEANIA	**726**	**383**	**1,189**	**1,626**	**1,780**	**1,336**	**1,049**	**680**	**636**	**472**	**392**	**379**
OTHERS AND NOT STATED	**303**	**824**	**674**	**738**	**840**	**577**	**268**	**303**	**220**	**177**	**1,180**	**341**
TOTAL	**128,793**	**99,340**	**216,417**	**232,764**	**254,848**	**256,758**	**224,390**	**212,865**	**226,045**	**216,020**	**174,164**	**189,906**

[1] Includes Honk Kong SAR (Special Administrative Region) since July 1, 1997.

Note: Preliminary data as of September 26, 2000.

Sources: Citizenship and Immigration Canada, unpublished data.

Table A11. Canadian Population as of July 1st, 1997, 1998, 1999, by Age and Sex (in thousands)

Age	Males			Females		
	1997	1998	1999	1997	1998	1999
0	183.6	176.6	173.3	172.6	167.7	164.4
1	196.2	184.8	177.7	188.0	174.2	169.3
2	199.7	197.4	185.8	189.3	189.1	175.1
3	201.4	200.8	198.3	191.2	190.2	190.0
4	205.6	202.5	201.7	195.3	192.2	191.1
5	210.7	206.8	203.4	201.2	196.4	193.1
6	213.7	212.0	207.8	203.1	202.5	197.5
7	214.5	214.9	213.0	204.2	204.2	203.4
8	207.2	215.7	215.8	197.0	205.3	205.0
9	201.4	208.4	216.7	192.0	198.1	206.0
10	203.5	202.7	209.4	193.9	193.1	199.0
11	207.7	204.8	203.6	196.6	194.9	193.7
12	209.3	209.0	205.7	197.3	197.6	195.7
13	207.9	210.7	210.1	197.3	198.3	198.3
14	207.3	209.3	211.8	196.5	198.3	199.1
15	207.3	208.8	210.4	196.5	197.6	199.2
16	210.4	208.9	210.1	199.7	198.0	198.9
17	210.8	211.9	210.3	199.3	201.4	199.6
18	208.7	212.3	213.5	196.6	200.9	202.8
19	206.5	210.3	214.2	194.9	198.6	203.0
20	207.7	207.7	211.7	197.7	196.7	200.7
21	208.1	208.7	209.2	199.4	199.6	198.9
22	208.0	209.3	210.4	200.5	200.9	201.7
23	202.7	209.4	211.2	196.1	201.8	202.8
24	204.8	203.8	211.3	198.6	197.7	204.0
25	208.7	205.9	205.6	203.2	200.1	199.9
26	218.0	209.8	207.7	213.4	204.9	202.3
27	220.4	219.4	211.7	214.5	214.9	207.0
28	218.6	222.1	221.3	214.2	216.1	217.0
29	219.7	220.3	224.2	216.0	215.8	218.2
30	226.8	221.4	222.5	222.5	217.7	217.8
31	241.3	228.2	223.3	235.8	223.8	219.5
32	260.2	242.5	229.7	253.9	237.2	225.2
33	270.2	261.1	243.8	263.3	255.2	238.4
34	274.1	271.3	262.3	268.0	264.6	256.4
35	269.3	275.0	272.5	264.6	269.5	265.8
36	271.8	270.1	276.1	268.8	265.8	270.6
37	269.1	272.5	270.7	266.8	269.8	266.6
38	263.3	269.6	272.7	263.0	267.8	270.4
39	262.3	263.8	269.9	260.5	263.8	268.4
40	257.2	262.8	264.1	256.8	261.3	264.3
41	249.6	257.7	263.0	249.9	257.4	261.7
42	247.9	250.0	257.9	248.5	250.5	257.6
43	239.5	248.4	250.2	241.8	248.9	250.6
44	229.5	239.8	248.6	231.7	242.1	248.9
45	222.3	229.8	239.9	222.5	231.8	241.9
46	218.3	222.4	229.7	218.4	222.6	231.7

See notes at the end of the table.

Table A12. Canadian Population as of July 1st, 1997, 1998, 1999, by Age and Sex (in thousands) - Concluded

Age	Males			Females		
	1997	1998	1999	1997	1998	1999
47	214.5	218.3	222.2	214.4	218.4	222.5
48	210.7	214.4	217.9	211.6	214.3	218.1
49	211.3	210.3	213.9	211.5	211.3	213.9
50	210.7	210.9	209.7	211.4	211.2	210.8
51	181.1	210.2	210.3	182.1	211.2	210.9
52	169.0	180.5	209.5	169.7	181.8	210.9
53	164.6	168.2	179.7	166.1	169.3	181.4
54	159.7	163.8	167.3	161.3	165.7	168.8
55	148.3	158.9	162.9	150.2	160.8	165.2
56	142.2	147.5	157.9	145.0	149.9	160.4
57	134.4	141.3	146.4	137.3	144.6	149.4
58	130.9	133.5	140.2	133.9	136.8	144.0
59	126.2	129.8	132.4	129.3	133.5	136.4
60	121.5	125.1	128.6	125.0	128.8	133.0
61	121.2	120.3	123.8	125.2	124.5	128.2
62	117.8	119.9	118.9	122.5	124.6	123.8
63	115.1	116.2	118.2	119.5	121.7	123.8
64	116.2	113.4	114.4	121.9	118.7	120.8
65	116.3	114.3	111.4	121.9	121.0	117.6
66	113.6	114.1	112.0	122.2	120.8	119.8
67	109.4	111.3	111.7	119.6	120.9	119.4
68	103.2	107.0	108.8	115.3	118.2	119.5
69	100.3	100.6	104.4	114.5	113.8	116.6
70	95.0	97.6	97.8	111.8	112.8	112.0
71	91.4	92.0	94.6	111.8	109.9	110.8
72	87.0	88.3	88.8	109.3	109.8	107.8
73	81.9	83.7	84.9	106.4	107.2	107.5
74	76.8	78.5	80.2	102.2	104.0	104.7
75	73.3	73.4	75.0	100.3	99.6	101.3
76	67.4	69.7	69.8	94.4	97.4	96.7
77	61.0	63.8	66.1	87.6	91.4	94.3
78	50.4	57.8	60.6	75.6	84.8	88.5
79	45.3	47.0	54.4	69.1	72.6	81.8
80	41.6	42.0	43.7	66.0	66.1	69.5
81	38.1	38.1	38.4	62.4	62.7	62.6
82	35.9	34.7	34.6	60.5	58.8	59.0
83	31.2	32.6	31.3	55.0	56.8	55.0
84	26.7	28.0	29.3	49.0	51.4	53.1
85	21.9	23.8	25.0	42.8	45.4	47.7
86	18.2	19.1	20.9	37.7	39.3	41.7
87	15.2	15.6	16.4	32.5	34.3	35.8
88	12.2	12.9	13.3	27.8	29.0	30.8
89	10.0	10.3	11.0	23.6	24.5	25.7
90 +	29.5	31.1	32.8	86.5	90.0	94.0
Total	14,850.9	14,981.5	15,104.7	15,136.3	15,266.5	15,388.7

1997: Final postcensal estimates from October 19, 2000.
1998: Updated postcensal estimates from October 19, 2000.
1999: Updated postcensal estimates from October 19, 2000.
Source: Statistics Canada, Demography Division, Population Estimates Section.

Glossary*

Age: Age at last birthday (in years).

Aging (of a Population): An increase of the percentage of old persons in the total population.

Birth Cohort or Generation: Unless otherwise specified, refers here to a group of persons born within the 12-month period between January 1st and December 31st of a given year.

Census Coverage

Net undercoverage: Difference between undercoverage and overcoverage.

Overcoverage: Number of persons who should not have been counted in the census or who were counted more than once.

Undercoverage: Number of persons not enumerated in a census (who were intended to have been enumerated).

Census Metropolitan Area (CMA): The general concept of a census metropolitan area (CMA) is one of a very large ***urban area***, together with adjacent ***urban*** and ***rural areas*** which have a high degree of economic and social integration with that urban area.

A Census Metropolitan Area is delineated around an urban area (called the ***urbanized core*** and having a population of at least ***100,000 (based on the previous census)***. Once an area becomes a CMA, it is retained in the program even if its population subsequently declines.

CMAs are comprised of one or more ***census subdivisions (CSDs)*** which meet at least one of the following criteria:

(1) the CSD falls completely or partly inside the urbanized core;

(2) at least 50% of the employed labour force ***living*** in the CSD ***works*** in the urbanized core; or

(3) at least 25% of the employed labour force ***working*** in the CSD ***lives*** in the urbanized core (***1991 Census Dictionary***, Catalogue no. 92-351-XPE, page 181).

---

* For further information consult the following: International Union for the Scientific Study of Population (1980). **Multilingual Demographic Dictionary**, Ordina Editions, Liège and Van de Walle, Étienne. **The Dictionary of Demography**, ed. Christopher Wilson. Oxford, England, New York, New York, United States of America.

Cohort: Represents a group of persons who have experienced a specific demographic event during a given period which can be a year. Thus, the married cohort of 1996 consists of the number of persons who married in 1996. Persons born within a specified year could be referred to as a generation.

Cohort, fictitious: An artificial cohort created from portions of actual cohorts present at different successive ages in the same year.

Common-law Union: Union consisting of a male and a female living together as husband and wife, without being legally married.

Components of Demographic Change: Any of the classes of events generating population movement or variations. Births, deaths, migration, marriages, divorces and new widowhoods are the components responsible for the change in total population or in the age, sex and marital status distribution of the population.

Current index: An index constructed from measurements of demographic phenomena and based on the events reflecting those phenomena during a given period, usually a year. For example, life expectancy in 1996 is a current index in the sense that it indicates the average number of years a person would live if he or she experienced 1996 conditions throughout his or her life.

Dependency Ratio: The total population is customarily divided up into three broad age groups: 0-14 (children), 15-64 (adults) and 65 and over (older persons). The following ratios may be defined on the basis of this classification:

(a) child dependency ratio: The number of children per adult (15-64);

(b) age dependency ratio: The number of aged persons per adult (15-64);

(c) total dependency ratio: The sum of the child and the aged dependency ratios.

Error of Closure: Difference between the postcensal estimate and the population adjusted for net undercoverage according to a census for the same date.

Fertility: Relates the number of live births to the number of women, couples or, very rarely, men.

Infant mortality: Mortality of children less than a year old.

Intensity: Frequency of occurrence of an event among members of a given cohort.

Intercensal: The period between two censuses.

International Migration: Movement of population between Canada and a foreign country which involves a change in residence. A distinction is made between ***landed immigrants***, ***returning Canadians*** from other countries who settle in Canada, ***emigrants*** and the net change in ***non-permanent residents***.

Interprovincial Migration: Movement from one province to another involving a permanent change in residence. A person who takes up residence in another province is an ***out-migrant*** with reference to the province of origin, and an ***in-migrant*** with reference to the province of destination.

Life expectancy: A statistical measure derived from the life table that indicates the average years of life remaining for a person at a specified age, if the current age-specific mortality rates prevail for the remainder of that person's life.

Legal Marital Status: Indicates the conjugal status, that is whether single, married, widowed or divorced.

Single: Includes persons who have never been married and all persons under 15 years of age.

Married: Includes persons legally married and persons legally married and separated.

Widowed: A person whose spouse has died and who has not remarried.

Divorce: A person who has obtained a legal divorce and who has not remarried.

Mean Age: The mean age of a population is the average age of all its members.

Median Age: The median age is an age "x", such that exactly one half of the population is older than "x" and the other half is younger than "x".

Natural Increase: A change in population size over a given period as a result of the difference between the numbers of births and deaths.

Neonatal mortality: Mortality in the first month after birth (part of infant mortality).

Net migration: Difference between immigration and emigration for a given area and period of time.

Non-permanent Residents: The five following groups are referred to as non-permanent residents:

- persons residing in Canada claiming refugee status;

- persons residing in Canada who hold a student authorization (foreign students, student visa holders);
- persons residing in Canada who hold an employment authorization (foreign workers, work permit holders);
- persons residing in Canada who hold a Minister's permit;
- all non-Canadian born dependents of persons claiming refugee status, or of persons holding student authorizations, employment authorizations or Minister's permits and living in Canada.

Parity: A term used in reference to a woman or a marriage to denote the number of births or deliveries by the woman or in the marriage. A two-parity woman is a woman who has given birth to a second-order child.

Population: Estimated population and population according to the census are both defined as being the number of Canadians whose usual place of residence is in that area, regardless of where they happened to be on Census Day. Also included are any Canadians staying in a dwelling in that area on Census Day and having no usual place of residence elsewhere in Canada, as well as those considered "non-permanent residents".

Population Estimate:

Preliminary, Updated and Final Postcensal: Population estimates produced by using data from the most recent census adjusted for net census undercoverage and estimates of the components of demographic change since that last census.

Intercensal: Population estimate derived by using postcensal estimates and data from the most recent census counts adjusted for net undercount preceding and following the year in question.

Population Growth: A change, either positive or negative, in population size over a given period.

Population movement: Gradual change in population status over a given period attributable to the demographic events that occur during the period. Movement here is not a synonym for migration.

Population Projection: The projection differs from the estimate in that its objective is to establish what the evolution of the population will be in the future by size, geographical distribution and other demographic characteristics using selected hypotheses. A reference is made to a projection when the formulated hypotheses appear to be highly probable. Generally, population projections are restricted to a short term period.

Post-neonatal mortality: Mortality between the ages of one month and one year.

Prevalence: Number of cases existing at one point in time.

Probability of survival: Probability of a survivor of exact age x surviving at least to age $x+n$. Its notation is ${}_np_x$ and it is the complement of the probability of dying $(1-{}_nq_x)$.

Proportion ever married: A measure of the prevalence of marriage in a generation or a fictitious cohort. It is usually equivalent to the proportion remaining single at an age such as 50 after which first marriages are rare.

Rate:

Age-Specific Fertility: Ratio of the number of births occurring in a given age group to the number of females of a given age (per 1,000).

Birth: Refers to a rate calculated by relating the number of live births observed in a population during a given period to the size of the population during that period (per 1,000).

Divorce: Refers to the number of divorces per 1,000 population.

First Marriage: Ratio of the number of first marriages observed in a population in a given period to the number of persons in that population regardless of the marital status (per 1,000).

Mortality: Ratio of the annual number of deaths occurring in a population or sub-population during a given period to the number exposed to the risk of dying during the same period (per 1,000).

Population Growth: Ratio of population growth between the year t and t+1, to the average population of that period (per 1,000).

Residual: Difference between population growth as measured by population estimates of two consecutive years and the sum of the components. This difference results from the distribution of the closure error between years within the quinquennial period.

Returning Canadians: Canadian citizens and landed immigrants who emigrated from the country and who subsequently returned to Canada to re-establish a permanent residence.

Sex Ratio: The ratio of the number of men to the number of women. This is not to be confused with the sex ratio at birth, which is the ratio of the number of liveborn boys to the number of liveborn girls. This ratio is usually expressed as an index, with the number of females taken to be a base of 100.

Standardized Rates: Mathematical transformations designed to make it possible to compare different populations with respect to a variable, e.g., fertility or mortality, where the influence of another variable, e.g., age, is held constant.

Structure: Arrangement of a population by different demographic characteristics such as age, sex or marital status.

Tempo: Distribution over time, within the cohort, of the demographic events corresponding to the investigated phenomenon.

Total Rates: A period measure obtained by the summation of the series of age-specific or duration-specific rates. It represents the behaviour of the members of the fictitious cohort.

Total Divorce Rate: Proportion of marriages that finish in divorce before the 25th anniversary according to the divorce conditions of that year. It is a result of the sum of the divorce rates by length of marriage expressed per 10,000.

Total Fertility: Average number of children per female according to the fertility in a given year computed by the summation of the series of age-specific fertility rates.

Total First Marriage: Proportion of males or females marrying before their 50th birthday according to nuptiality conditions in a given year computed by the summation of the rates by age at first marriage.

Vital Statistics: Includes all the demographic events (that is to say births, deaths, marriages and divorces) for which there exists a legal requirement to inform the Provincial or Territorial Registrar's Office.

Part II

SMOKING AND DISABILITY-FREE LIFE EXPECTANCY IN CANADA

by Laurent Martel, Alain Bélanger and Jean–Marie Berthelot

IMPACT OF CAUSES OF DEATH ON LIFE EXPECTANCY AT HIGHER AGES FROM 1951 TO 1996

by Stéphane Gilbert and Alain Bélanger

FAMILY AND DEMOGRAPHIC CHANGES AND THE ECONOMIC WELL-BEING OF PRESCHOOL-AGE CHILDREN IN CANADA, 1981-1997

By Don Kerr and Alain Bélanger

A STEP FURTHER IN FAMILY LIFE: THE EMERGENCE OF THE BLENDED FAMILY

by Heather Juby, Nicole Marcil-Gratton and Céline Le Bourdais
with the collaboration of Paul-Marie Huot

SMOKING AND DISABILITY-FREE LIFE EXPECTANCY IN CANADA

by Laurent Martel, Alain Bélanger and Jean–Marie Berthelot

For more than a century, the life expectancy at birth of women has been longer than that of men (respectively 81.4 years and 75.8 years in 1997). Over time, this advantage for women, while initially modest (1.8 years in 1921), increased steadily to a high of 7.5 years in 1978 (Nault, 1997). Since then, the gap between the life expectancy of men and women has narrowed and in 1997, it was 5.6 years, a reduction of almost two years over less than two decades.

Other than a biological factor favouring women, the inequality between sexes with respect to death also reflects social and behavioural factors (Chesnais, 1998). Men and women do not have the same behaviours and habits: traditionally, for example, women have held jobs of lower risk to health than men, which may have contributed to widening the mortality gap between genders in the past.

An examination of the recent evolution in the main causes of death in Canada reveals a number of changes in the behaviour of women that have a negative impact on their health. Mortality rates attributable to cardiovascular diseases—the leading cause of death in the country—have fallen since the late 1970s, but more so among men than among women (Health Reports, 2001). Similarly, the incidence of lung cancer and related deaths has risen sharply among women over the past 25 years, while it has dropped among men, thereby closing a large part of the gap for this type of cancer (Health Reports, 2001). Indeed, mortality associated with this disease has increased so much among women that, in the early 1990s, it surpassed breast cancer (ACPH, 1999). There has also been a rise in mortality associated with chronic obstructive pulmonary diseases among women (Nault, 1997).

Numerous scientific studies have shown a strong correlation between these often fatal diseases and smoking. Some studies even suggest that close to half of the mortality differential between men and women is attributable to smoking alone (Waldron, 1986). Other researches have shown that in Canada, approximately a quarter of the deaths of individuals aged 35 to 84 years can be attributed to this habit (Collishaw and al., 1988; Makomaski and al., 1995). According to Ellison and al. (1995), tobacco use was responsible for almost 45,000 deaths in Canada in 1991. Cigarette smoking represents the primary cause of premature death and of potential years of life lost, far ahead of suicide, violent death, AIDS and murder combined (Ellison and al., 1999; Légaré and al., 1993; Pelletier and al., 1996). The near stagnation of remaining life expectancy

at age 85 observed for the past 20 years or so could also be due in part to the smoking history of the cohorts reaching this age (Nusselder and Mackenbach, 2000). In view of the relationship between smoking and mortality, any change in smoking prevalence ultimately has a significant impact on life expectancy.

The evolution of smoking has followed different paths for men and women despite the fact that, in general, they both are smoking less today than in the 1960s and 1970s when more than one in two men and almost two in five women smoked (ACPH, 1999). Today, approximately 30% of men and 25% of women aged 12 years or older are daily or occasional smokers (ACPH, 1999). This means that, over a period of 30 years, the prevalence of smoking among men and women has converged.

In Canada, the decline in smoking among male cohorts and the increase among female cohorts born between 1900 and 1950 led to a homogenization of smoking habits among the cohorts born in the mid-1950s (Ferrence, 1988; Marcil-Gratton and al., 1992). The latent period for diseases associated with smoking means that these individuals are now at the ages where mortality associated with smoking is at its highest and certainly explains the narrowing of the mortality gap between men and women for cardiovascular diseases and lung cancer.

While the relationship between smoking and mortality has been much studied, much less is known about its links to disability. When it is very high, as is the case in Canada, life expectancy is not the ideal indicator to define a population's state of health. For example, the increased effectiveness of treatments for a disease could enable a larger number of individuals to survive but in a state of disability. Thus, the use of other aggregated indicators is necessary to better define population's health and disability-free life expectancy is one of them. This indicator can be used to desegregate life expectancy in terms of the years spent with or without disability or with dependency of greater or lessor severity.

The purpose of this article is to measure the effect of smoking on disability-free life expectancy in the Canadian population. Although it has been established that eliminating smoking would increase life expectancy, the impact on the quality of the years lived has been less clearly described. Would the lost years have been years lived in good health or is the premature death of smokers sparing them only years lived in a state of disability or with the dependencies that often accompany old age? It seems important to determine whether smokers must look forward not only to dying prematurely but also to having to live longer with one or more disabilities.

To our knowledge, there are no studies on this topic for Canada. We know, however, that smokers are hospitalized more frequently than persons who have never smoked (Johansen, 1999), which suggests a possible link between morbidity and smoking. A few recent studies have looked at the effect of

smoking on disability-free life expectancy in the United States and the Netherlands, but not in Canada. These studies clearly show the negative effect of smoking on this indicator (Rogers and al., 1994; Nusselder, 1998).

In this article, the calculation of disability-free life expectancies is based on multi-state life tables. Of a more complex calculation than those obtained using the traditional method (Sullivan method), which simply distributes total life expectancy between the various functional states based on the observed prevalence of each of these states in the population at a given point in time, the multi-state tables are based on an estimate of the transitions between each of the functional states and on the mortality rates specific to each of these states. An individual with activity limitations or a dependency, even a severe one, can still regain his independence at any age. The multi-state life tables make it possible to explicitly include this dynamic and thus more closely reflect reality. However, estimating the transitions between the functional states requires longitudinal surveys, which are more complex and costly to carry out and, accordingly, relatively scarce. The National Population Health Survey (NPHS) is the first survey that can be used to estimate these transitions possible for a representative sample of the Canadian population.

The other advantage of the multi-state life tables model is that it makes it possible to explicitly take into consideration the mortality differences between the various functional states. This is especially important when calculating disability-free life expectancy because, more than in any other applications of the model, mortality is likely to vary widely from state to state, the degree of good or poor health obviously being a key determinant of mortality.

Data Source and Method

The data used in this research are taken from the longitudinal panel of the National Population Health Survey (NPHS) conducted by Statistics Canada since 1994. As the first longitudinal survey representative of the Canadian population as a whole, the NPHS gathers detailed information on physical and mental health, functional capabilities, use and access to health care, chronic health problems and lifestyles and behaviour related to health. Its purpose is to promote a better understanding of health and its determinants (Swain and al., 1999).

The sample used in this study is representative of the whole of the Canadian population aged 45 years and older, that is, the population living in private households (6,053 respondents) and in long-term health care establishments (1,956 respondents). The mortality differentials according to functional state and the transitions between these states are estimated from the first two NPHS cycles (1994-95 and 1996-97).

As a panel survey, the longitudinal component of the NPHS does not add new respondents to the various data collection cycles. Consequently, the

longitudinal sample is only representative of the Canadian population in 1994 and its size gradually decreases through attrition[1] as the cycles progress. Since attrition is low, especially for the population aged 45 and older, and the weights of the survey have been recalculated to take into account this element, as the sample design and post-stratification (Tambay and al., 1998), it is unlikely that it produces any significant bias.

Functional States

Health is a difficult concept to define and should not be restricted to the solely absence of disease. The advantage of defining health as a functional state allowing individuals to be or not to be independent in their activities of daily living is that it links the health—or functional—status to the potential burden that its deterioration may represent. For example, an individual dependent on someone else for his personal care or to move about within his home would need intensive, daily assistance that is often of great costs for the health care system or the informal support network.

In this study, functional states are defined so as to respect certain criteria. The first one is that the definition used must allow for the creation of homogeneous and distinct groups in terms of the risk of dying and of losing or regaining independence. Further, it was important to obtain groups large enough to ensure greater robustness when estimating mortality rates and the probabilities of transition between the various states.

Operationally, two concepts were used and combined under the generic term "disability" in order to define an individual's functional state: activity limitations and dependencies. It is likely that, in the process of losing one's independence, activity limitations occur before dependencies and ideally, it would have been preferable to distinguish those individuals suffering from activity limitations but no dependency from those with one or more dependencies. Further, it should be noted that relatively fewer male respondents indicated that they required assistance from someone else to prepare meals, to shop for groceries or to perform normal everyday housework, activities often performed by women, at least in the case of the today's older cohorts. This explains to a large extent the differences observed between men and women in the prevalence of dependencies. On the other hand, this division between sexes was almost non-existent in the answers to the question on activity limitations.[2] However, the need to ensure a sufficient number of respondents in each of the states made it necessary to group respondents.

---

[1] Attrition is the process by which some respondents from the first cycle in 1994-95, for example, are not interviewed in the subsequent cycle. There are generally two types of attrition: non-response (respondents located in 1996-97 but not wishing to be part of the survey) and non-located. The latter case is relatively rare since it represents 1.7% of the total NPHS sample (Béland and Bustros, 1998).

[2] The exact question was: "Because of a long-term physical or mental condition or a health problem are/is... limited in the kind or amount of activity you/he/she can do (a) at home, (b) at school, (c) at work, (d) in other activities such as transportation to or from work or leisure time activities?"

Table 1. Summary Table of the Functional States

Functional States	*Activity Limitations*	*Dependency*
No disabilities	None	None
Light or moderate disability	Yes	No
	Yes or no	Heavy household chores, shopping for groceries, normal everyday housework
Severe disability	Yes or no	Preparing meals, personal care, move around the house
Health-care facilities	...	...

Consequently, four functional states were defined (Table 1): a person was classified as independent (no disability) if he or she answered that there was no activity limitation and no dependency. Persons included in the category "slight or moderate disability" had some activity limitations but no dependency or required assistance from someone for heavy household chores, to go shopping for groceries or to perform normal everyday housework, regardless of whether they had any activity limitations. Individuals classified as the most severely disabled were those who required assistance from a third party to prepare their meals, for their personal care or to move about the house, regardless of whether they had any activity limitations. Lastly, individuals residing in long-term health care establishments made up the fourth functional state of health.

States Related to Tobacco Use

The richness of the NPHS questionnaire allows for separation of the study population into two categories (smokers and non-smokers) taking into consideration the latent period for smoking related diseases (Table 2). Although the risks related to cardiovascular disease decrease quite quickly after the cessation of tobacco use (Lacroix and al., 1991), the risk associated with lung cancer can have a much longer latent period. It was therefore important to include a lapse of time after the cessation of use during which period the former smokers are still at risk of health problems related to their former habits.

In this study, a smoker is defined as a respondent who reported either that he or she smoked daily or is a former daily smoker who had stopped within the past 5 years or still smoked occasionally by now. Respondents

Table 2. Summary Table of the Smoking States

Smokers	*Non-smokers*
Daily smoker	Never smoked
Occasional smoker (former daily smoker)	Always an occasional smoker
Former daily smoker who stopped in the last 5 years	Former daily smoker who stopped more than 5 years ago

classified as non-smokers were those who never smoked in their lives, those who smoked but always occasionally, and those who smoked regularly but stopped more than 5 years ago.

Method

The calculation of disability-free life expectancy using the multi-state life tables model is based on estimating two elements: the first is the mortality differential by functional state and smoking status, and the second is the transitions between the different functional states for the two populations—smokers and non-smokers.

Since the NPHS sample is relatively small, estimating mortality rates by age, sex and the four functional states does not produce very robust results using only the survey data. However, life tables produced from the vital statistics provide a better estimate of mortality for the Canadian population as a whole. The method used to estimate the mortality differential by functional state takes advantage of this information and uses the survey data to increase or decrease the risk of death of individuals according to their functional state reported in the first cycle by means of an estimation of relative risks. These relative risks for each of the states are applied to the probability of dying from the Canadian life tables to produce new probabilities for each functional state. The mortality base level is therefore a reliable estimate that takes the whole of the Canadian population into consideration.

Estimate of the Mortality Differential

The relative risks are estimated using a proportional hazard model (Cox regression), which, in addition to the functional states, takes into consideration age and an interaction variable between age and these states. The introduction of this interaction variable enables the relative risks for the various functional

states to converge as age increases. The assumption is that the functional state of a younger person has a greater impact on his or her probability of dying than that of an older person.

In general, the modelling results show that the relative risks of smokers with respect to mortality are two times higher than those of non-smokers for both men and women (data not presented). Similar results have been obtained by various studies that have shown that smokers generally increase their risk of dying by a factor of about two (Collishaw and al., 1988; Mao and al., 1988; Rogers and al., 2000).

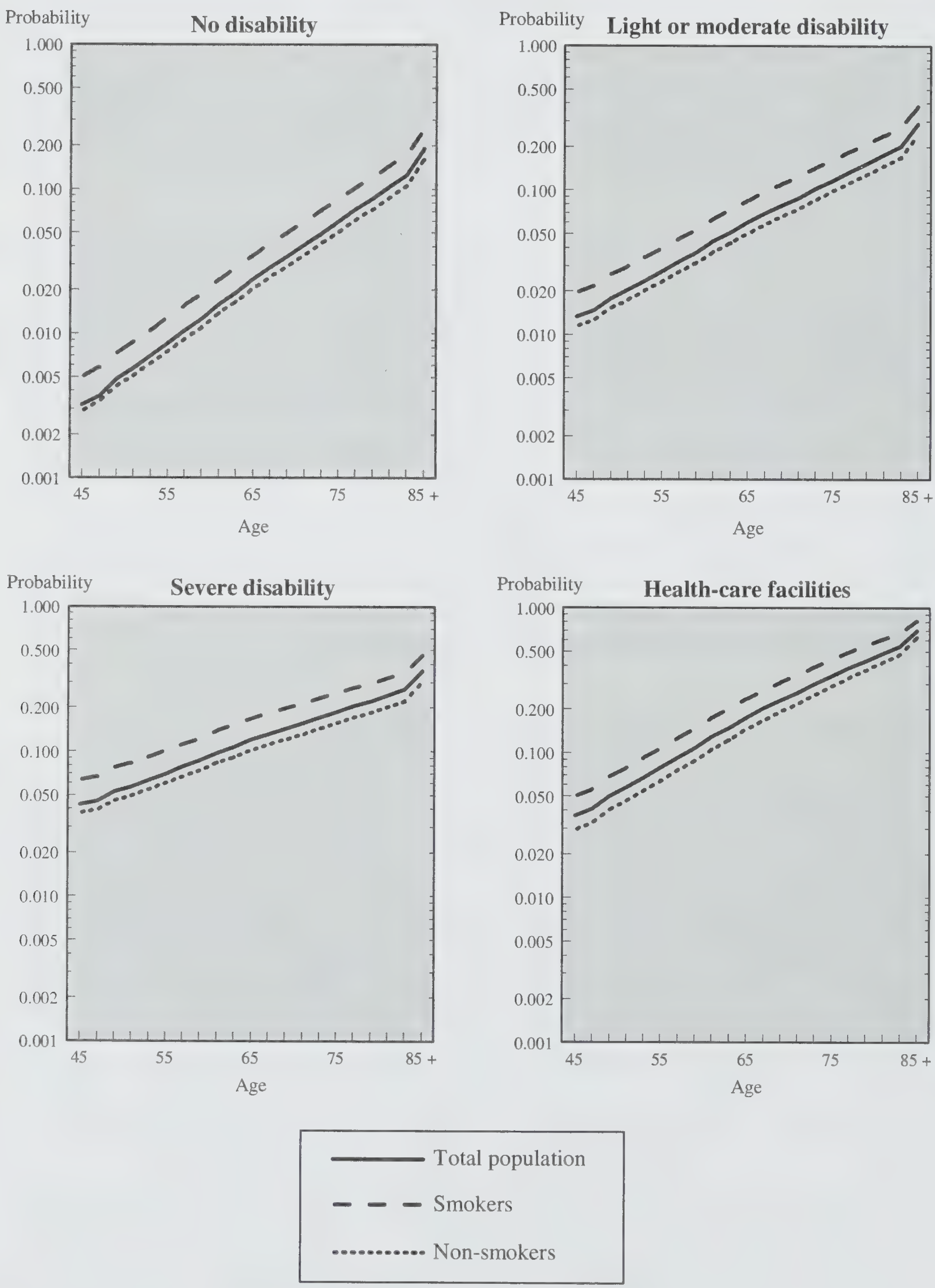
Figure 1 presents the probability of dying obtained for each functional state by age, sex and smoking status. The more the functional state declines, the more mortality rises. As expected, probabilities of dying increase progressively with age in each of the states. Except for those living in health care establishments prior to age 65, women have lower mortality than men for every functional state and smoker status. In addition, in the case of smokers with severe disabilities, the mortality for men and women is similar: at this stage of deterioration in health, the consequences of smoking are probably the same for both sexes. Lastly, the probabilities of dying for smokers are always higher than for non-smokers and this is true for all functional states, at all ages and for both sexes. Therefore, despite the relatively small size of the study sample, the estimate of the probabilities of dying by functional states and smoking behaviour appears to be reliable.

Estimation of Transitions Between Functional States

Calculation of the multi-state life tables also requires an estimation of the transitions—subject to survival—between the functional states for each sex and for the two tobacco habits. Table 3 presents the probabilities of moving from one functional state to another between 1994 and 1996 for the entire population aged 45 years and older. We find, for example, that almost 16% of persons free of disability (independent) in 1994 had lost, to a certain extend, their independence in 1996. Among smokers, the probability of loss of independence was higher : almost 18% compared to 15% for non-smokers. Table 3 also reveals that the ability to regain one's independence is considerable, especially for individuals experiencing slight or moderate disabilities. Approximately 25% of these individuals regained their independence between 1994 and 1996: this percentage dropped to 23% for smokers compared to 26% for non-smokers. Similarly, a reasonable percentage of severely disabled individuals returned to a level of slight or moderate dependency two years later. Overall, regaining independence, whether in whole or in part, occurs more frequently among the non-smoking population, suggesting that smoking affects not only mortality but also functional capacity.

Figure 1. Probabilities of Dying by Functional State, Sex and Smoking Behaviour, Canada, 1994-1996

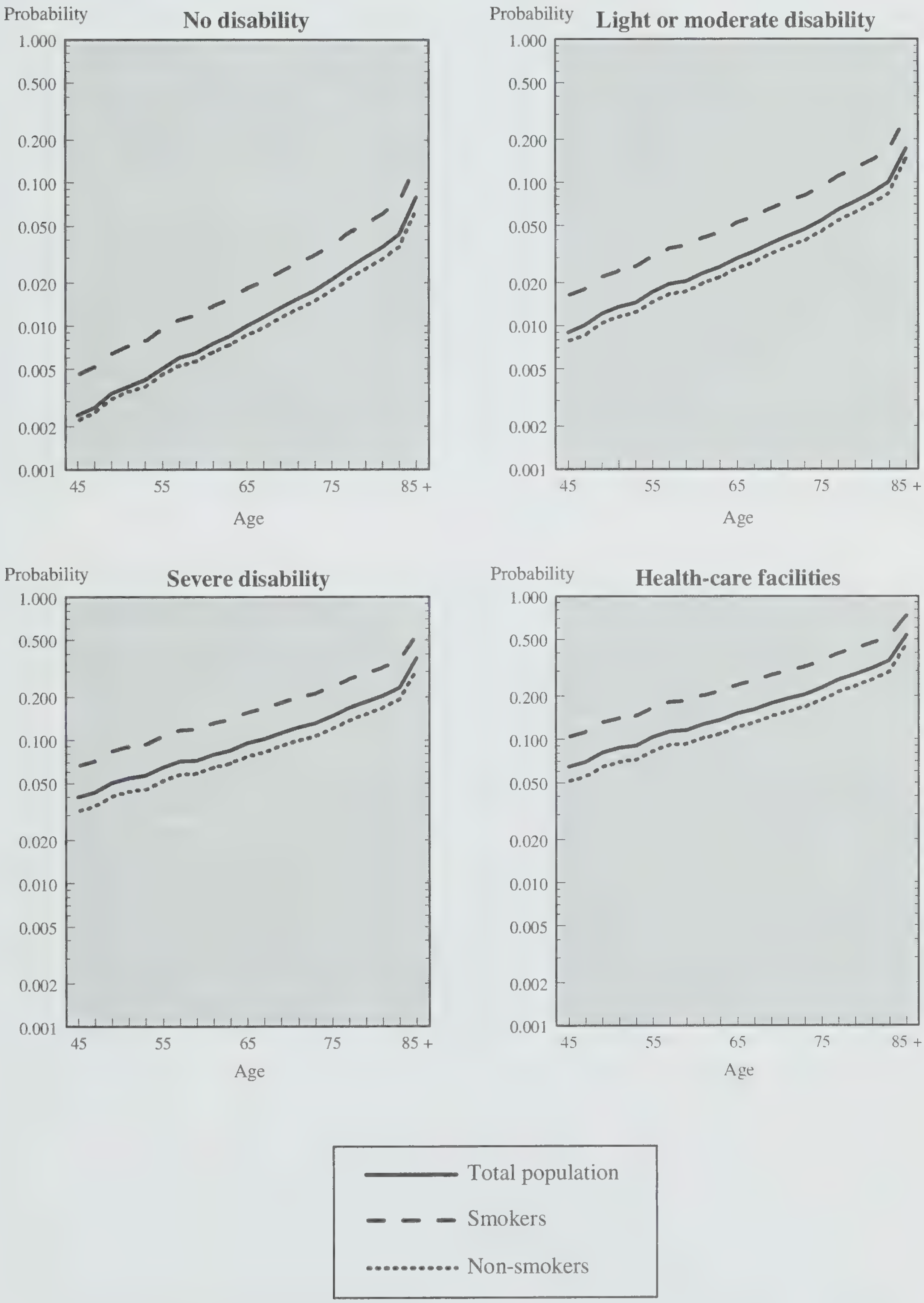
MALES



Source : Statistics Canada, National Population Health Survey, 1994-1996.

Figure 1. Probabilities of Dying by Functional State, Sex and Smoking Behaviour, Canada, 1994-1996 - end

FEMALES



Source : Statistics Canada, National Population Health Survey, 1994-1996.

Table 3. Transitions Between Functional States (Conditional on Survival) for the Total Population and by Smoker Status, Canada, 1994-1996

Functional State in 1994	Functional State in 1996					
	No disabilities	Light or moderate disability	Severe disability	Health-care facilities	Crude death rate	Number
	Total population					
No disability	0.842	0.136	0.019	0.003	1.8	3,830
Light or moderate disability	0.247	0.658	0.089	0.007	6.1	1,924
Severe disability	0.081	0.356	0.487	0.076	20.3	299
Health-care facilities	0.000	0.000	0.009	0.991	35.7	1,956
	Smokers					
No disability	0.823	0.155	0.021	0.001	2.0	1,052
Light or moderate disability	0.227	0.683	0.091	0.004	7.8	580
Severe disability	0.053	0.346	0.521	0.080	17.0	81
Health-care facilities	0.000	0.000	0.017	0.983	33.5	419
	Non-smokers					
No disability	0.850	0.128	0.019	0.003	1.5	2,773
Light or moderate disability	0.258	0.646	0.088	0.008	6.0	1,343
Severe disability	0.094	0.360	0.472	0.074	22.5	218
Health-care facilities	0.000	0.000	0.007	0.993	36.1	1,368

Source: Statistics Canada, National Population Health Survey, 1994-1996.

Lastly, it should be mentioned that the probability of leaving a long-term health care establishment is practically zero, at least for persons aged 45 or older.[3] In this regard, the fourth functional state can be considered as a virtual absorbing state on almost the same level as death.

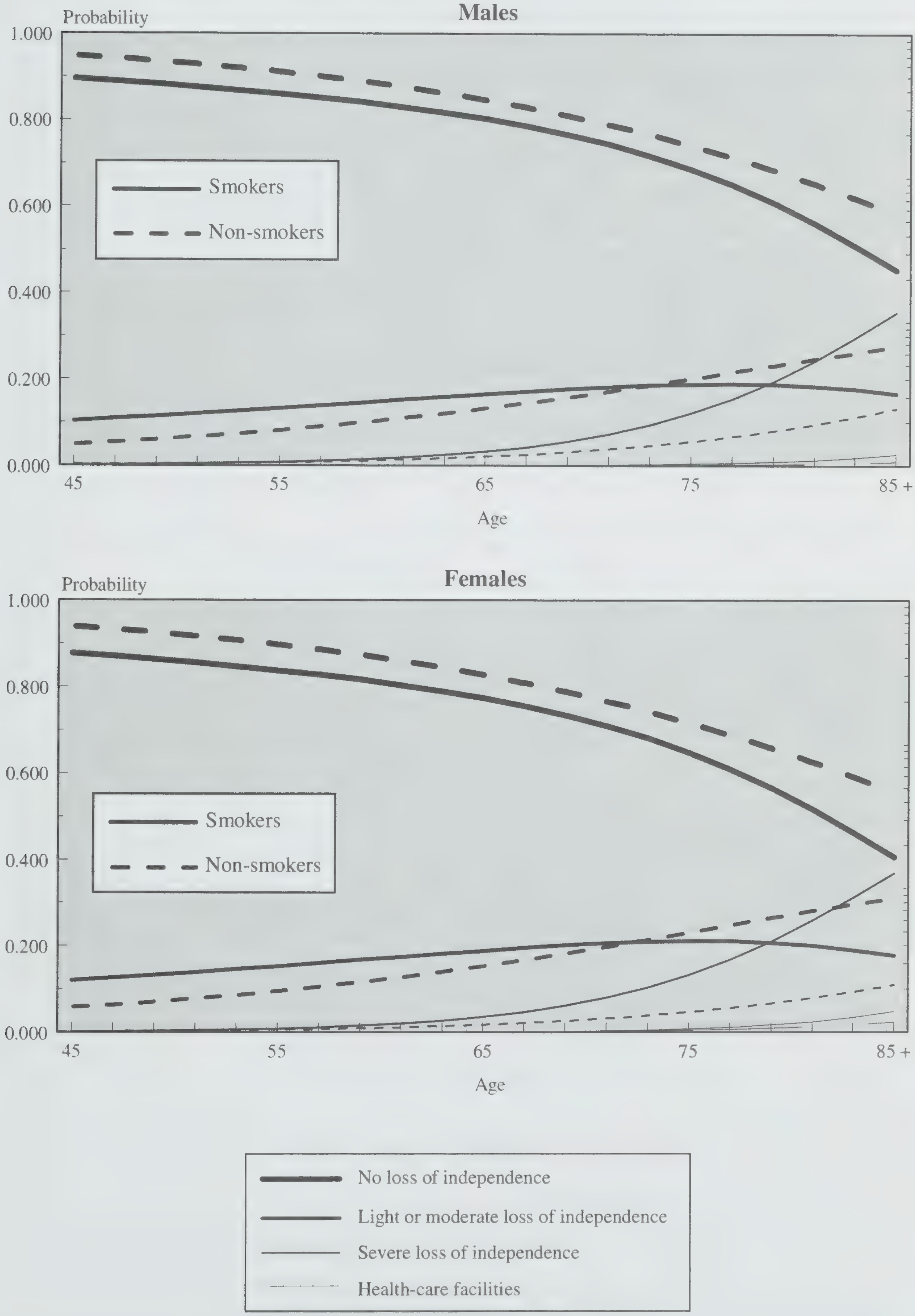
Because of the small sample size, the direct calculation of the probability of making a transition between each functional state by age, sex and smoking status introduce undesirable random variations from one age group to another. Transitions between functional states by age and sex for smokers and non-smoker was estimated by using a generalized polychotomous logit model,[4] allowing to eliminate those random variations. For each original state, the probability of making a transition to another state is assumed to be a function of age and sex, the only two variables included in the regression. However, the model provides for inclusion of competing risks, that is, that the probability of making a transition from one functional state to another also depends on all of the other states. Separate models were estimated for smokers and non-smokers.

Figures 2 and 3 present some of the transitions from Table 2, broken down by age and sex. Figure 2 shows the evolution, as age progresses, of the risks of losing one's independence, specifically, the probability that an

[3] Because of the small number of institutionalized respondents who returned to live in private households in 1996 and their probably precarious functional state for the most part, it was assumed that these returns were all made at stage 3, that of severe disability.

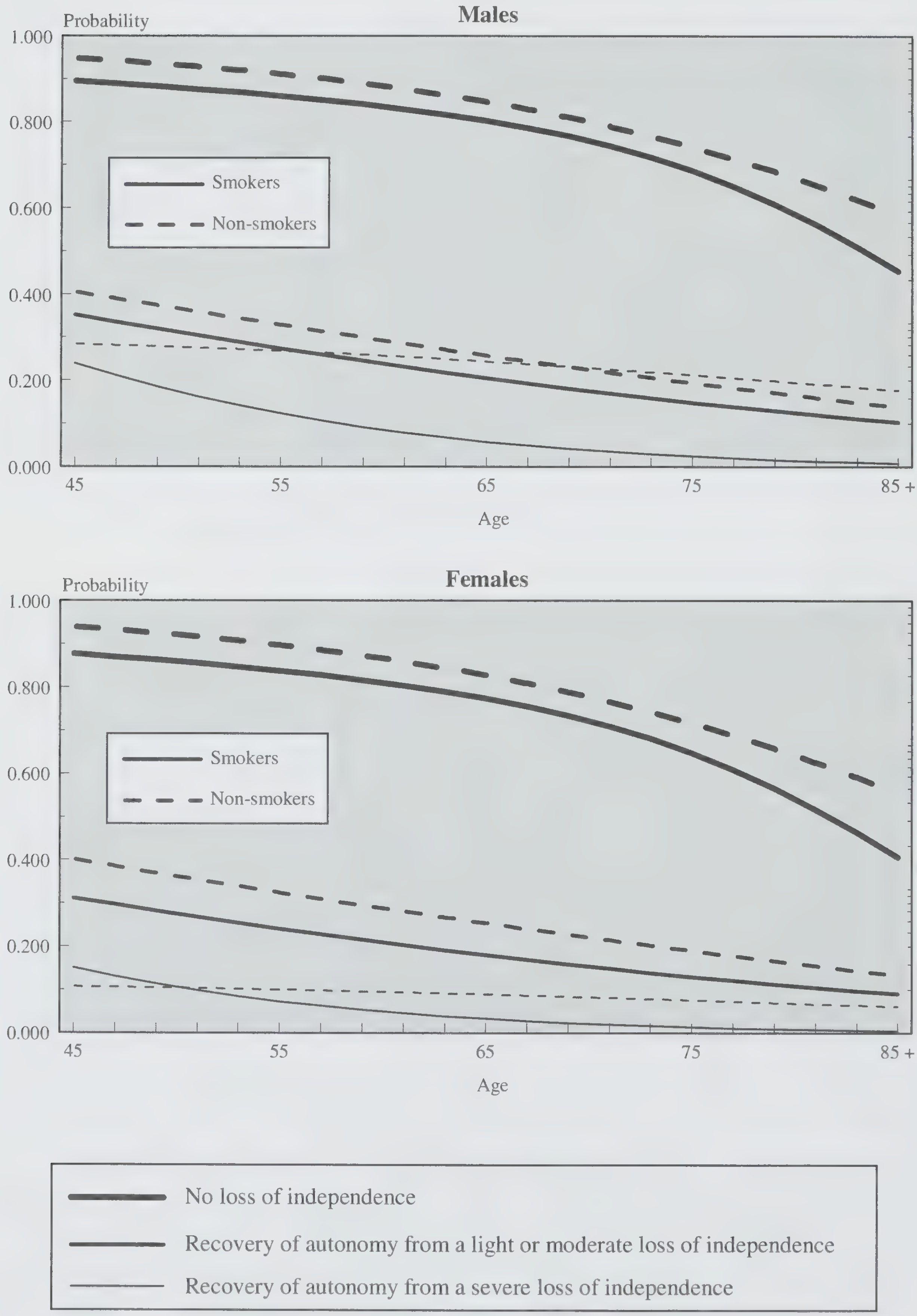
[4] "Generalized logit model" (CATMOD procedure in the SAS statistics software).

Figure 2. Probability of Transiting from Independent State in 1994 to Another Functional State in 1996 by Sex, Age and Smoking Behaviour, Canada



Source: Statistics Canada, National Population Health Survey, 1994-1996.

Figure 3. Probability of Transiting from a Disability State in 1994 to a State of Independence in 1996 by Sex, Age and Smoking Behaviour, Canada



Source: Statistics Canada, National Population Health Survey, 1994-1996.

independent person in 1994 reported a slight, moderate or severe disability or was institutionalized in 1996. The effect of age is very clear: the older the individual, the more the chance of remaining independent recedes, falling from almost 95% at 45 years to less than 60% at 85 years. Being a smoker aggravates this situation since, at all ages, smokers have a lower probability of remaining independent than non-smokers. There appears to be little difference, however, between men and women.

Figure 3 shows the total recovery of independence, that is, the probability of again being without disability in 1996 of respondents who reported some disabilities in 1994. The probability of recovering independence for individuals with slight, moderate or severe disabilities definitely diminishes with age, but the results show that it is far from negligible, thereby illustrating that functional health is a dynamic process and does not move in only one direction. At age 45, close to 40% of persons with a slight or moderate disability recovered their independence, a proportion that falls to just below 30% for those with severe disabilities. At all ages and for all states of disability, smoking decreases the chance of a recovering independence, sometimes considerably (as is the case with severe disability state).

Two fundamental points come out of this analysis of the transitions between functional states: first, recovering independence is a frequent phenomenon, even among persons older than 65 years (Martel and al., 2000). It is therefore important to take this into consideration when calculating aggregate health indicators and using the multi-state life tables enables us to do this. Second, smoking can be viewed as a double jeopardy to functional health: not only does it increase the risks of losing one's independence, but it also reduces the chance of recovering it. Episodes of dependency and activity limitations are therefore more frequent and longer for smokers than for non-smokers. The calculation of disability-free life expectancy makes it possible, through a measurement that is intuitively easy to understand, to determine the impact of smoking on both the mortality and morbidity of the population.

Results

Taking into consideration mortality differentials by functional state, as well as the transitions between these states, total remaining life expectancy at age 45 is estimated at 32.9 years for men and 37.7 years for women in 1995[5] (Table 4).[6] The life expectancy of male smokers at age 45 is 28.1 years,

---

[5] It is assumed that individuals who died between 1994 and 1996 lived half of this time, specifically one year. For this reason, the results presented are for 1995, located in the middle of the interval between the first two cycles of the NPHS.

[6] As a comparison, life expectancy at the same age, based on the official Statistics Canada mortality table and produced using vital statistics, gives 32.7 years for men and 37.6 years for women (Bélanger, 1999). The life expectancy estimate presented in this report is therefore very close to the official mortality table, given random variations resulting from the use of a sample survey.

almost five years less than for the male population in general. Among women, the gap is even larger : more than 7 years (30.5 for women smokers compared to 37.6 years for the total female population). On the other hand, life expectancy at 45 years for non-smoking men is 35.5 years, almost 3 years longer than for the male population as a whole and more than 7 years longer than for smokers. Among non-smoking women, the life expectancy at the same age is 40.8 years or 3 years longer than for the female population as a whole, and more than 10 years longer than for female smokers.

The differences in life expectancy between smokers and non-smokers remains significant even at 65 years: almost 6 years of life expectancy separate men who smoke from those who do not, a gap that is 8.5 years among women (Table 4). Tobacco use therefore is associated with a decrease in life expectancy, going so far as to eliminate close to one-quarter of the remaining life years of women aged 45 years. It is difficult to compare these results with those of other studies on this topic. This is because these are the first to take into consideration in their calculation the mortality differential by functional state and the transitions between states. We should point out, however, that Nam and al. (1994) estimated that, in the United States, at 25 years of age, the gap between the life expectancy of smokers and non-smokers was 18 years.

Several reasons can be put forward to explain such differences in mortality attributable to smoking. On the one hand, it should be remembered that the probabilities of dying used in this calculation are those of smokers at all ages between 45 and 85 years. This life expectancy is therefore related to individuals who allegedly smoked during their entire lives. On the other hand, numerous studies have shown the close correlation between smoking and co-morbidity: smokers suffer more often than others from several diseases at the same time (Nam and al., 1994; Hummer and al., 1998). Lastly, it has been shown that non-smokers often adopt other preventive behaviours related to their health, such as regular physical activity, moderate alcohol consumption and better eating habits (Marcil-Gratton and al., 1992). Conversely, smoking and excessive alcohol and drug consumption are often linked (Clark, 1996; Pérez, 1999). There is no question that these elements contribute to widening the mortality gap between smokers and non-smokers.

Smoking appears to have a greater impact on gap in the life expectancy of women than of men, confirming the findings of other researchers (Prescott and al., 1999). One possible explanation of this observation might be found in the evolution, by sex, of the prevalence of smoking in past cohorts. Men began smoking in large numbers earlier and many of them stopped during their lives. Consequently, the population of non-smoking men aged 45 and older would be more heterogeneous, that is, it would have a larger percentage of former smokers than the population of women among whom the widespread use of tobacco began much later. This appears to be confirmed by the NPHS. Among the non-smoking population aged 45 years or more, almost two-thirds

Table 4. Life Expectancy and Disability-free Life Expectancy at Age 45 Years and 65 Years for the Total Population, Smokers and Non-smokers, by Sex, Canada, 1995 (Multi-state Model)

	Males			Females		
	e_x	$dfle_x$	Difference	e_x	$dfle_x$	Difference
x = Age 45	In years					
Smokers	28.1	17.8	10.3	30.5	17.1	13.4
Non-smokers	35.5	24.8	10.7	40.8	25.0	15.8
Total population	32.9	22.2	10.7	37.7	22.6	15.1
Difference between smokers and non-smokers	7.4	7.0	...	10.3	7.9	...
	In percent					
Smokers	100.0	63.3	36.7	100.0	56.1	43.9
Non-smokers	100.0	69.9	30.1	100.0	61.3	38.7
Total population	100.0	67.5	32.5	100.0	59.9	40.1
x = Age 65	In years					
Smokers	12.4	5.8	6.6	14.5	5.7	8.8
Non-smokers	18.3	9.8	8.5	23.0	10.5	12.5
Total population	16.0	8.2	7.8	20.3	9.0	11.3
Difference between smokers and non-smokers	5.9	4.0	...	8.5	4.8	...
	In percent					
Smokers	100.0	46.8	53.2	100.0	39.3	60.7
Non-smokers	100.0	53.6	46.4	100.0	45.7	54.3
Total population	100.0	51.3	48.7	100.0	44.3	55.7

Source: Statistics Canada, National Population Health Survey, 1994-1996.

of women (65%) stated that they had never smoked, a percentage close to double that among the non-smoking men (35%). Similarly, more than half of the non-smoking men had previously been regular smokers (56%) compared with just one in four of the non-smoking women (26%). The negative effects of tobacco use may persist for more than five years, which may be part of the reason for its greater impact on the gap in life expectancy for women.

Disability-free Life Expectancy

Disability-free life expectancy at various ages was calculated for the total population and by functional state. For the male population as a whole, disability-free life expectancy at age 45 is 22 years, or 68% of the total life expectancy at this age (33 years), putting the burden of disability at about one-third of the average life span. For women, disability-free life expectancy without disability is slightly higher than for men (23 years) but represents a smaller proportion of their total life expectancy (60%). The burden of disability among women therefore appears to be greater than among men, a situation that is

explained both by women's longer life expectancy and their greater propensity than men to suffer from chronic, often debilitating, diseases. At age 65, the picture is similar with one slight difference in that the proportion of life expectancy lived free of disability is considerably shortened for both men (51%) and women (44%).[7]

The analysis of disability-free life expectancy by tobacco use shows that its negative effects are not limited to mortality. Table 4 shows that at age 45, disability-free life expectancy of men who smoke is only 18 years compared with 25 years for those who do not smoke, a difference of 7 years. Among women, the situation is similar with the gap between smokers and non-smokers being 8 years in favour of the latter. ***Virtually all (95%) of the additional years of life that a male non-smoker can expect to live over a smoker will be lived free of disability. Not only is a smoker more likely to die younger than a non-smoker, as other studies have already shown, but on average the smoker is more likely to be limited or dependent in his activities of daily living much earlier than a non-smoker***. For women, the gains in disability-free life expectancy related to the absence of tobacco use are slightly higher than among men, but they represent a smaller proportion (77%) of the total gain. The risk of experiencing limitation or dependency in one's activities of daily living increases with age among smokers and non-smokers. Because of their greater longevity, the gains that women may make by abstaining from smoking occur at older ages than for men, which explains why a smaller proportion of years are lived free of disability.

Further, since the life expectancy of smokers is considerably shorter than that of non-smokers, the latter will spend a few more years of their life with some type of disability (10.7 years for non-smoking men compared to 10.3 years for smokers; 15.8 years for non-smoking women compared to 13.4 years for smokers).

There is such a large difference in average longevity between smokers and non-smokers that it makes the analysis expressed as a percentage of these years of life much more interesting. ***Men who smoke can expect, at age 45, to spend 63% of their remaining years living free of a disability, a proportion that climbs to 70% for non-smokers. For women, the trend is the same: 56% of life expectancy at age 45 years will be lived free of disability for those who smoke compared with 61% for those who do not smoke***. In short, non-smokers can expect not only to live longer than smokers and to live longer free of disability, but also to spend a smaller percentage of their life with a

[7] Although the trends are the same with respect to evolution by age and sex, these findings cannot be compared with those published last year in this same publication and which showed that in 1996 close to 80% of the life expectancy at 65 years among men and 69% among women was lived free of dependency (Martel and Bélanger, 1999). The concept of disability is broader than that of dependency and the inclusion of activity limitations in this study reduces the percentage of years lived without disability.

disability. The lower incidence of disability among the non-smoking population, combined with their increased chance of recovering their independence, means that they will spend a larger proportion of their total life expectancy free of disability. This finding is especially remarkable given that the risk of acquiring a disability increases with age and non-smokers on average enjoy a longer life than smokers.

The situation is similar, although less notable, at age 65. Smokers still have a shorter disability-free life expectancy than non-smokers but the differences in average longevity are such that the burden of disability, in number of years, is higher among non-smokers (8.5 years for non-smoking men compared with 6.6 years for smokers; 12.5 years for non-smoking women compared with 8.8 years for smokers). Expressed as a percentage of life expectancy, however, non-smokers still spend a longer period of their lives without disability. The burden of disability is therefore higher for smokers at 65 years.

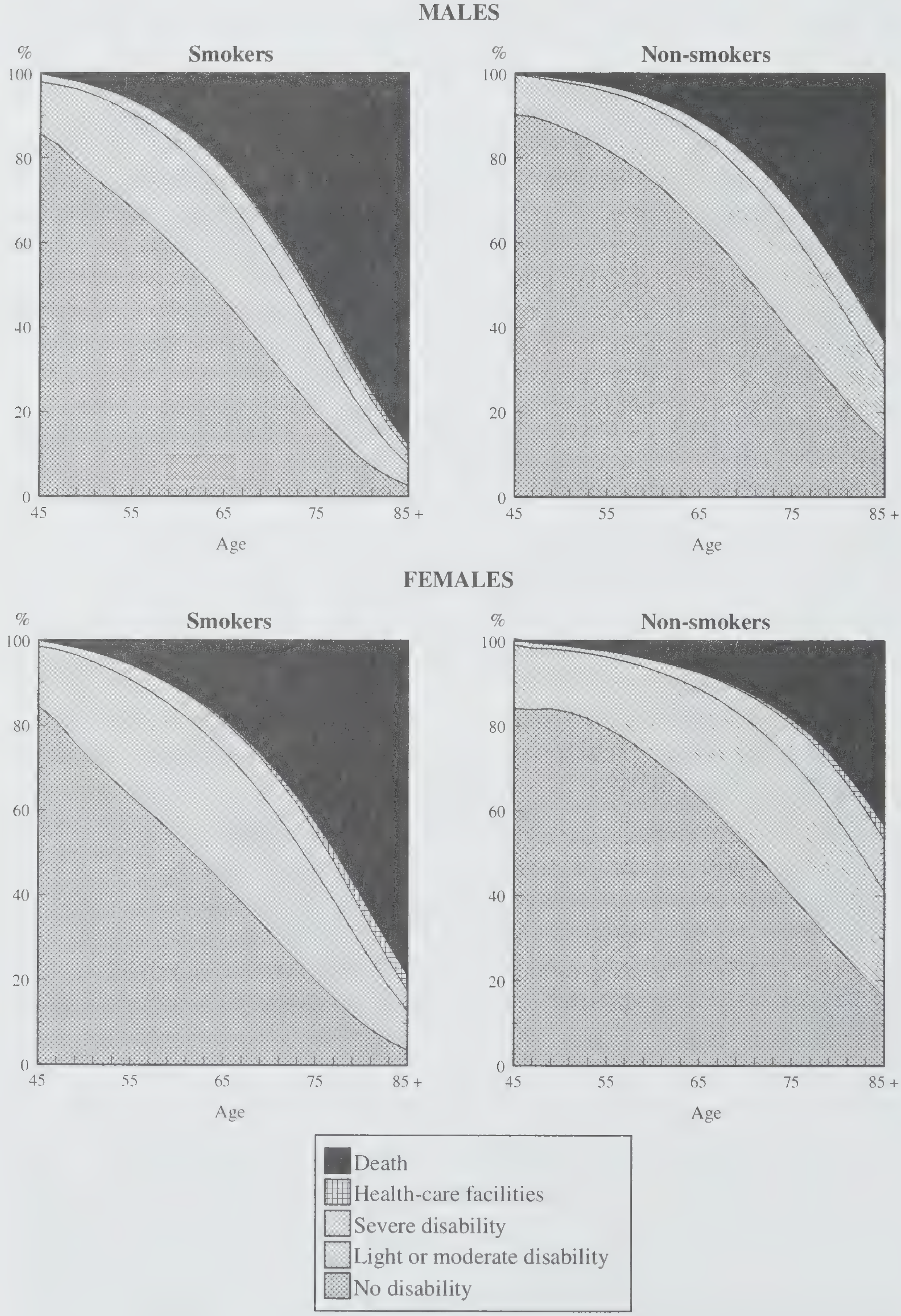
Figure 4 shows the evolution in the number of survivors for the various functional states. For men and women, it is easy to see the effect of smoking on mortality, the number of survivors at all ages being lower among smokers than among non-smokers, illustrating how tobacco use is associated with a significant number of premature deaths in the Canadian population. For every 100 male non-smokers living at age 45 years, about 90 will survive to age 65 and approximately 55 will still be living at age 80. The corresponding figures for smokers are 80 survivors at age 65 and fewer than 30 survivors at 80 years. For women, the percentage of survivors is higher for both smokers and non-smokers, but the negative consequences of tobacco use are just as evident. At 80 years, for example, about 70% of non-smoking women survive compared with about 40% of smokers.

It is equally evident from the same chart that the number of survivors not reporting any disability is significantly higher among non-smokers. Among both men and women, two-thirds of non-smokers will survive without any disability at age 65, compared with less than half of smokers. At age 80, 25% of non-smoking men and 30% of non-smoking women survivors have no disability, while these proportions are below 10% for both men and women who smoke.

Disability-free Life Expectancy by Functional State

All of the results presented so far are population based, i.e. have dealt with the population in general regardless of functional state. The multi-state life table however makes it possible to carry out a more detailed analysis. For example, the life expectancy at age 45 of men who are independent is 33 years, one year longer than for those with slight or moderate disabilities, 2.5 years longer than those with severe disabilities and 12.3 years longer than those living in health care establishments (Table 5). The vast majority of the

Figure 4. Survivors by Age, Sex, Smoking Behaviour and Functional State, Canada, 1994-1996



Source: Statistics Canada, National Population Health Survey, 1994-1996.

Table 5. Life Expectancy at Age 45 Years by Functional State and Sex and Breakdown by Percentage of Years Lived in the Various States, Canada, 1995

	Preva-lence (%)	e_{45} (years)	No disability (% from e_{45})	Light or moderate disability (% from e_{45})	Severe disability (% from e_{45})	Health-care facilities (% from e_{45})
MALES	Total population					
No disability	89.4	33.0	69.7	23.6	6.1	0.6
Light or moderate disability	9.7	32.0	55.6	37.2	6.9	0.6
Severe disability	0.8	30.5	53.4	30.5	15.7	0.7
Health-care facilities	0.1	20.7	15.5	10.6	6.8	66.7
	Smokers					
No disability	83.6	28.3	66.1	25.8	7.1	1.1
Light or moderate disability	14.1	27.1	49.8	40.6	8.5	1.1
Severe disability	2.0	25.0	46.4	31.6	21.2	1.2
Health-care facilities	0.2	18.5	16.8	14.6	10.8	57.8
	Non-smokers					
No disability	92.7	35.6	71.1	22.5	6.2	0.3
Light or moderate disability	7.1	34.8	58.3	34.8	6.6	0.3
Severe disability	0.1	33.5	56.4	29.3	14.0	0.3
Health-care facilities	0.1	22.6	13.3	8.4	4.9	73.0
FEMALES	Total population					
No disability	84.5	37.6	62.4	28.5	7.3	1.8
Light or moderate disability	14.3	36.8	49.7	40.4	8.1	1.9
Severe disability	1.0	34.5	44.8	36.2	16.7	2.3
Health-care facilities	0.1	19.7	14.1	13.9	7.5	64.6
	Smokers					
No disability	83.6	30.7	58.5	31.7	7.8	2.0
Light or moderate disability	14.7	29.4	42.9	45.9	9.2	2.0
Severe disability	1.7	26.5	38.0	37.8	22.1	2.1
Health-care facilities	0.0	15.7	14.8	18.1	11.7	55.3
	Non-smokers					
No disability	85.0	40.9	63.2	27.5	7.8	1.5
Light or moderate disability	14.1	40.2	52.1	38.1	8.3	1.5
Severe disability	0.7	38.5	47.6	35.4	15.3	1.7
Health-care facilities	0.2	22.3	11.9	11.4	5.9	70.8

Source: Statistics Canada, National Population Health Survey, 1994-1996.

population is independent at age 45 years, although with some variation related to smoking status: smokers are already displaying a higher prevalence of disability than non-smokers.

The breakdown of these years of life also varies by functional state: accordingly, almost 70% of the 33 years that an independent male at age 45 can expect to live will be lived free of disability. For those with severe disabilities,

only half (53.4%) of the years to live—already fewer than for those who are independent—will be spent free of disability. In other words, life expectancy decreases and the burden of disability increases as functional state declines.

Depending on functional state, the consequences of smoking on morbidity are clear. Except for individuals living in long-term health care establishments, the proportion of years that smokers live free of disability is systematically smaller than among non-smokers. For example, a male smoker aged 45 with slight or moderate disabilities could expect to spend almost half of his remaining 27.1 years, on average, living free of disability. For a non-smoker, this percentage is close to 60%. Not only is the life expectancy of smokers in each of the functional states shorter than that of non-smokers, but the burden of disability is also heavier.

The situation is very similar among women, although the difference between smokers and non-smokers is even more marked (Table 5). Approximately 65% of the 40.9 years of life expectancy of independent non-smoking females at age 45 will be lived free of disability, a proportion that drops to 59% for smokers who, moreover, can expect a considerably shorter life expectancy (30.7 years). The latter are already experiencing slight or moderate disabilities at age 45 and must expect to spend slightly more than 57% of their remaining years with a disability of greater or lesser severity, compared to only 48% for non-smokers who will also live longer.

For both men and women, the burden of disability appears to be less among smokers living in long-term health care establishments than for non-smokers. Such findings, while surprising at first glance, need to be considered in conjunction with the considerably higher mortality of smokers. Smokers have a shorter life expectancy at age 45 and enter these establishments earlier than non-smokers who, in addition, live there longer than smokers. For these reasons, the length of exposure to the risk of disability is much longer for non-smokers, thereby increasing the burden.

Discussion

The purpose of this study was to estimate the effect of smoking on mortality and morbidity in Canada using an aggregate indicator: disability-free life expectancy. This indicator was calculated using the method of multi-state life tables because it makes it possible to take into consideration the dynamic of functional health. The findings obtained show that tobacco use is associated with not only a reduction in the number of years that a person may hope to live, but also with a reduction in the number of years lived free of disability. For their part, non-smokers live longer and live longer without disability. They also spend a higher percentage of their lives without disability. This conclusion

is based on a higher prevalence of disability at all ages, a higher probability of losing one's independence, and a lesser chance of recovering that independence for smokers compared to non-smokers.

The elimination of smoking could therefore lead to a compression of morbidity in Canada, concentrating the burden of disability over a shorter period of time, later in life. Similar findings were obtained for the Netherlands (Nusselder, 1998; Nusselder and al., 2000). The elimination or reduction of smoking would promote a longer life expectancy together with lesser proportion of those years lived with disability, thereby contradicting one popular idea that a longer life is necessarily synonymous with a longer period lived with disability. Lower levels of smoking would help to reduce the burden of disability in the Canadian population while increasing life expectancy.

These findings may also raise some concerns about the future when one considers recent trends in tobacco use by youth. Youth represent a group particularly at risk because it has been shown that more than four smokers in five began smoking before the age of 20 years (Clark, 1996). Moreover, the prevalence of smoking among youth aged 15-19 was higher in 1994-95 than in the late 1980s (Clark, 1996). The negative impact of this trend could therefore be felt on both the mortality and morbidity of the Canadian population twenty years from now. In addition, the most recent statistics available show that young women are now smoking more than young men (32% of girls aged 15 to 19 smoked daily in 1998-99 compared with 23% of boys (Pérez, 1999)), which could further slow future gains in life expectancy of women.

For many individuals, growing old is not a major concern as long as one remains in good health. At the population level, future gains in life expectancy may be less attractive if these additional years are spent in poor health. Smoking reduction could be a means of bringing together sometimes divergent views since it would not only increase the life expectancy of Canadians but would also help reduce the burden of disability.

BIBLIOGRAPHY

ACPH (Federal, Provincial and Territorial Advisory Committee on Population Health), 1999. Toward a Healthy Future, Second Report on the Health of Canadians.

Béland, Y. & J. Bustros (1998). "Aperçu global de la qualité de l'Enquête nationale sur la santé de la population (ENSP)", Assemblée annuelle de la SSC, Recueil de la Section des méthodes d'enquêtes, Statistics Canada, pp. 21-25.

Bélanger, A. (1999). ***Report on the Demographic Situation in Canada 1998-99***, Statistics Canada, catalogue no. 91-209, 200 p.

Chesnais, J.C. (1998). "La sous-mortalité féminine : de la sociologie à la biologie", in ***Morbidité, mortalité : problèmes de mesure, facteurs d'évolution, essai de prospective***, AIDELF, PUF, no. 8, pp. 489-497 .

Clark, W. (1996). "Youth Smoking in Canada", ***Canadian Social Trends***, Statistics Canada, catalogue no. 11-008, 43, pp. 2-7.

Collishaw, N.E.; Tostowaryk, W. & D.T. Wigle (1988). "Mortality Attributable to Tobacco Use in Canada", ***Canadian Journal of Public Health***, 79, pp. 166-169.

Ellison, L.F. ; Mao, Y. & L. Gibbons (1995). "Projected Smoking-Attributable Mortality in Canada, 1991-2000", ***Chronic Diseases in Canada***, 16 (2), pp. 84-89.

Ellison, L.F.; Morrison, H.I.; de Groh, M. & P.J. Villeneuve (1999). "Health Consequences of Smoking Among Canadian Smokers : An Update", ***Chronic Diseases in Canada***, 20 (1), pp. 36-39.

Ferrence, R. G (1988). "Sex Differences in Cigarette Smoking in Canada, 1900-1978 : A Reconstructed Cohort Study", ***Canadian Journal of Public Health***, 79, pp. 160-165.

Health Reports (2001). "How Healthy are Canadians?", Statistics Canada, catalogue no. 82-003, 12 (3 – special issue).

Hummer, R.A.; Nam, C.B. & R.G Rogers (1998). "Adult Mortality Differentials Associated with Cigarette Smoking in the United-States", ***Population Research and Policy Review***, 17, pp. 284-304.

Johansen, H. (1999). "Health Care Services – Recent Trends", ***Health Reports***, Statistics Canada, catalogue no. 82-003, 11 (3 – special issue), pp. 91-109.

Lacroix, A.Z. and al. (1991). "Smoking and Mortality Among Older Men and Women in Three Communities", ***New England Journal of Medicine***, 324 (23), pp. 1619-1625.

Légaré, J.; Marcil-Gratton, N. & F. Pelletier (1993). "Tabagisme et mortalité. La pertinence d'une approche longitudinale" in ***Montréal 1993, Congrès international de la population***, Liège, UIESP, Vol. 1, pp. 459-468.

Macomaski, E.M. & M.J. Murray (1995). "Mortality Attributable to Tobacco Use in Canada and its Regions, 1991", ***Canadian Journal of Public Health***, 86 (4).

Mao, Y.; Morrison, H.; Nichol, R.D.; Pipe, A. & D.T. Wigle (1988). "The Health Consequences of Smoking Among Smokers in Canada", ***Canadian Journal of Public Health***, 79, pp. 390-391.

Marcil-Gratton, N.; Huot, P.-M. & J. Légaré (1992). ***Habitudes tabagiques d'aujourd'hui et personnes âgées de demain***, Gouvernement du Québec, Ministère de la Santé et des Services Sociaux, 120 p.

Martel, L.; Bélanger, A. & J.-M. Berthelot (2000). "Les facteurs de risque associés aux transitions entre états fonctionnels : quelques résultats à partir du volet longitudinal de l'ENSP", Article soumis pour publication dans les Actes du colloque international de Byblos, Paris, AIDELF.

Martel, L. & A. Bélanger (1999). "An Analysis of the Change in Dependence-Free Life Expectancy in Canada between 1986 and 1996", in Bélanger, A., ***Report on the Demographic Situation in Canada 1998-99***, Statistics Canada, catalogue no. 91-209, pp. 164-186.

Nam, C.B.; Hummer, R.A. & R.G. Rogers (1994). "Underlying and Multiple Causes of Death Related to Smoking" ***Population Research and Policy Review***, 13, pp. 305-325.

Nault, F. (1997). "Narrowing Mortality Gaps, 1978 to 1995", ***Health Reports***, Statistics Canada, catalogue no. 82-003, 9 (1), pp. 35-41.

Nusselder, W.J. (1998). "Smoking Elimination produces compression of morbidity" in Nusselder, W.J., ***Compression or Expansion of Morbidity? A Life-Table Approach***, Thesis Publishers, Amsterdam, pp. 163-181.

Nusselder, W.J.; Looman, C.W.; Marang – Van de Mheen, P.J.; Van de Mheen, H. & J.P. Mackenbach (2000). "Smoking and the Compression of Morbidity", ***Journal of Epidemiological and Community Health***, 54 (8), pp. 566-74.

Nusselder, W.J. & J.P. Mackenbach (2000). "Lack of Improvement of Life Expectancy at Advanced Ages in The Netherlands", ***International Journal of Epidemiology***, 29 (1), pp. 140-148.

Pelletier, F.; Marcil-Gratton, N. & J. Légaré (1996). "A Cohort Approach to Tobacco Use and Mortality : The Case of Quebec", ***Preventive Medicine***, 25 (6), pp. 730-740.

Pérez, C. (1999). "Personal Health Practices : Smoking, Drinking, Physical Activity and Weight", ***Health Reports***, Statistics Canada, catalogue no. 82-003, 11 (3 – special issue), pp. 83-90.

Prescott, E.I.; Osler, M. Hein, H.O.; Borch-Johnsen, K.; Schnohr, P. & J. Vestbo (1999). "Smoking and Life Expectancy among Danish Men and Women", ***Ugeskr Laeger***, 161 (9), pp. 1261-1263.

Rogers, R.G.; Nam, C.B. & R.A. Hummer (1994). "Activity Limitations and Cigarette Smoking in the United States: Implications for Health Expectancies" in Mathers, C.; NcCallum, J. & J.-M. Robine (eds.), ***Advances in Health Expectancies***, Canberra, Australia : Australian Institute of Health and Welfare, pp. 337-344.

Rogers, R.G.; Hummer, R.A. & C.B. Nam (2000). "Cigarette Smoking and Mortality", in Rogers, R.G.; Hummer, R.A. & C.B. Nam (eds.), ***Living and Dying in the USA***, Academic Press, San Diego, London, Boston, New York, Sydney, Tokyo, Toronto, pp. 244-257.

Swain, L.; Catlin, G. & M. Beaudet (1999). "The National Population Health Survey– Its Longitudinal Nature", ***Health Reports***, Statistics Canada, catalogue no. 82-003, 10 (4), pp. 69-82.

Tambay, J.-L. ; Schiopu-Kratina, I. ; Mayda, J. ; Stukel, D. & S. Nadon (1998). "Treatment of Nonresponse in Cycle Two of the National Population Health Survey", ***Survey Methodology***, Statistics Canada, catalogue no. 12-001, 24 (2), pp. 147-156.

Valkonen, T. & F. Van Poppel (1997). "The Contribution of Smoking to Sex Differences in Life Expectancy : Four Nordic Countries and The Netherlands 1970-1989", ***European Journal of Public Health***, 7 (3), pp. 302-310.

Waldron, I. (1986). "The Contribution of Smoking to Sex Differences in Mortality", ***Public Health Report***, 101 (2), pp. 163-171.

IMPACT OF CAUSES OF DEATH ON LIFE EXPECTANCY AT HIGHER AGES FROM 1951 TO 1996

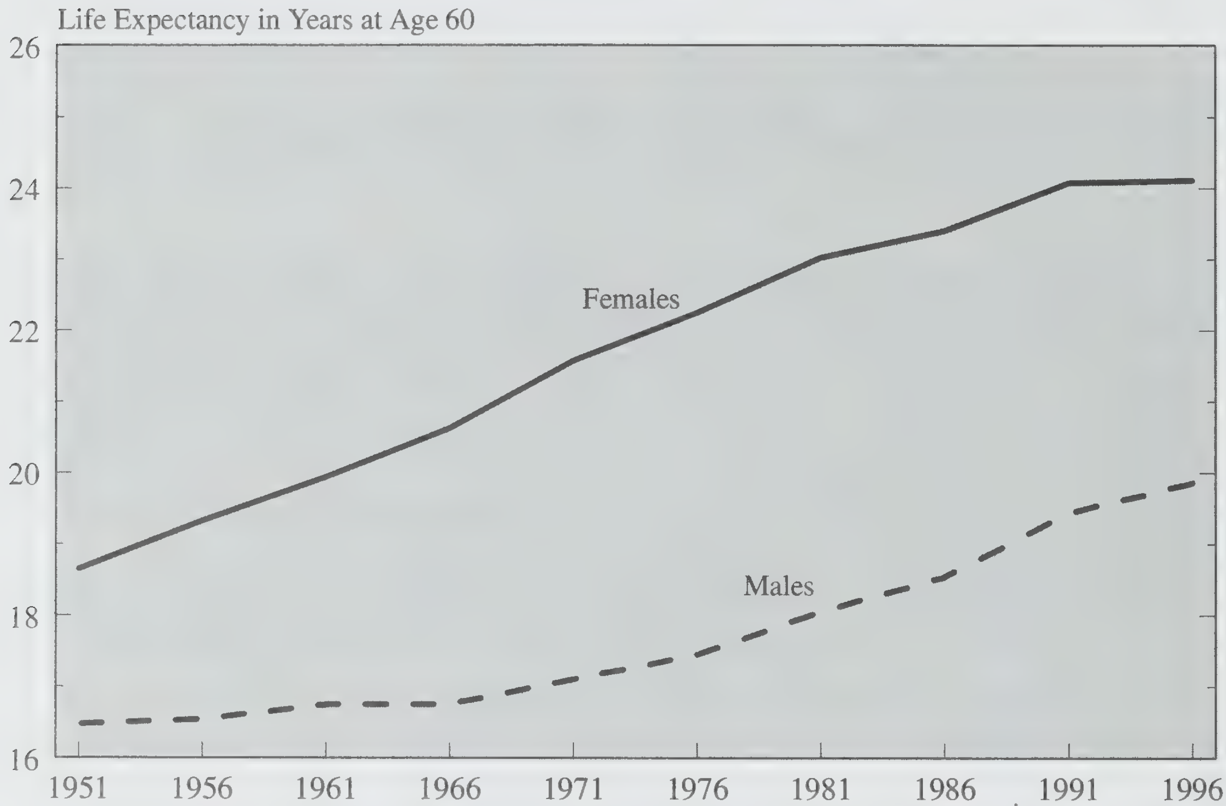
by Stéphane Gilbert and Alain Bélanger

Until the mid-twentieth century, the extension of life expectancy in most industrialized countries was largely due to medical advances against infectious diseases. The gradual reduction in these diseases, which primarily affect children under one year of age, has played a major role in extending life expectancy. Since infant mortality has now reached very low levels, and since deaths among children under one year of age are now largely due to endogenous causes, it is difficult to further compress infant mortality rates, and any future decreases will have very little impact on life expectancy. As a result, while the secular trend toward greater life expectancy continues, gains are now more attributable to decreased mortality among older persons than among children, teenagers or even young adults. Thus it is useful to analyse life expectancy gains by cause of death in persons aged 60 and over, particularly considering that by 2006, great numbers of Canadians—the large cohort consisting of the baby boomers born in the years following World War II—will start moving into their sixties.

Since the 1950s, life expectancy at age 60 has grown considerably. A woman reaching age 60 in 1951 could expect to live an additional 19 years on average, whereas in 1996, a woman of that age could expect to live an average of 24 years. For men, however, the increase has been less pronounced; their ***life expectancy increased by just over three years during the same period*** (Figure 1).

While life expectancy is growing continually, the gains vary considerably over time. Figure 2 shows the variation in gains for life expectancy at age 60 for five-year periods in the last half-century. There are variations not only from one period to another but also by sex. From 1951-1956 to 1976-1981, gains in life expectancy at age 60 were much greater for females than for males. For each of these five-year periods, females posted gains in excess of 0.6 years of life expectancy, while the gains for males did not exceed 0.2 years per five-year period prior to 1966-1971. ***In the early 1970s a new trend emerged: male gains in life expectancy at 60 rose almost continually, while female gains tended to decline from one period to the next***. Starting in 1981-1986, males' gains exceeded those of females. They remained relatively high (more than 0.4 years per five-year period) even for the most recent period (1991-1996), while females' gains over the latter period were practically nil, in sharp contrast with the past.

Figure 1. Life Expectancy at Age 60 by Sex, Canada, 1951-1996



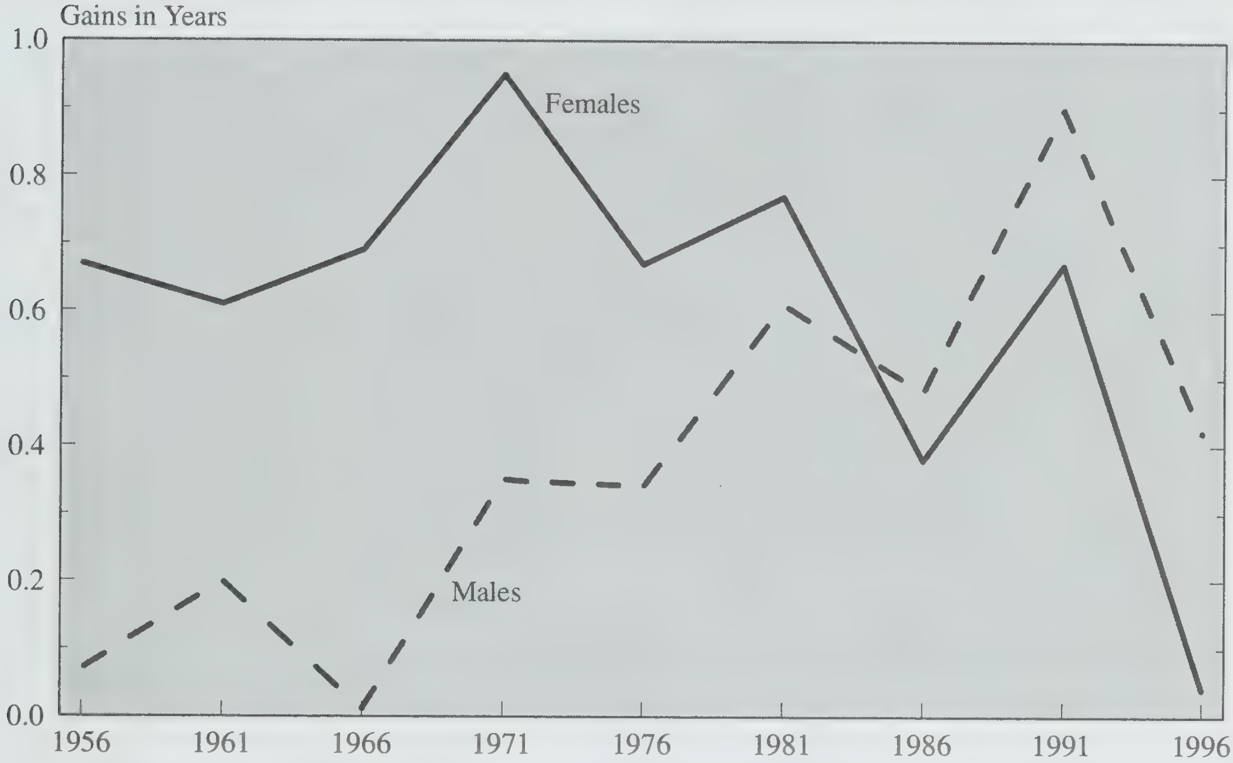
Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and analysis section.

It seems useful to analyse in greater detail how gains in life expectancy at age 60 have evolved over time, in particular by identifying the causes of death associated with those gains. It would seem that an ideal way to do this would be to use the method proposed by Pollard (1988) for analysing the contribution of each cause of death to the increase in life expectancy. An advantage of this method is that the life expectancy gains observed over a given period can be broken down by cause of death or by age group. It is therefore possible to identify those causes of death which are associated with an increase in gains and those which, on the contrary, have slowed those gains. But before examining the impact of each cause of death on life expectancy gains, it seems appropriate to draw a brief sketch of how mortality by cause of death evolved from 1951 to 1996.

Weighting of the Main Causes of Death Among Persons Aged 60 and Over

Little can be gained by examining annual figures on deaths according to their cause, since the population aged 60 and over has grown substantially

Figure 2. Gains in Life Expectancy at Age 60 by Sex, Canada, 1951-1996



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and analysis section.

over the period and its age structure has also changed over time. To obtain a better comparison over time, it is preferable to standardize the number of deaths according to the different causes by applying mortality rates by cause and age group to a population held constant. Figure 3 shows the number of deaths for each major cause, obtained by multiplying those rates by the size of the Canadian population in 1976. Overall, mortality at age 60 and over declined over the period. ***For both sexes—and especially for females—this decline in the standardized number of deaths is largely attributable to a decrease in diseases of the circulatory system (arteriosclerosis, stroke, heart disease, etc.). On the other hand, deaths caused by cancer and diseases of the respiratory system increased***.

Another way to analyse variations in the importance of the different causes of death is to look at their weight in relation to all deaths (Figure 4). Starting in 1981, the proportion of deaths attributable to diseases of the circulatory system declines especially rapidly. ***For males, this cause, which was responsible for 59% of all deaths in 1951, accounted for only 40% in 1996. For females, the decline was even more dramatic: during the period, the proportion of***

Causes of Death

To limit the analysis to the most important causes of death, we chose to select only those that accounted for at least 5% of all deaths registered during any of the five-year periods between 1951 and 1996. The effect of all other causes—those that never accounted for more than 5% of total deaths—is summarized in the "other" category. This Table shows the causes selected, along with the correspondence between the codes for each revision of the International Classification of Diseases (ICD). The causes are grouped into four major etiological categories, including "other."

The choice of the study period (1951 to 1996) is not unrelated to the different revisions of the ICD. Revisions prior to the 6th (that is, before 1950) are sufficiently different to make it both difficult and risky to establish a correspondence between the causes of death.[1] As epidemiologist and demographer Marie-Hélène Bouvier-Colle[2] points out:

> *"The evolution of specific diagnoses cannot accurately be traced back more than fifty years. Very often, the identification and naming of certain diseases has taken place only recently. Moreover ... it is hard to assess the consequences of these changes in numerical terms."*

deaths attributable to this cause fell from 62% of all deaths to 41%. Despite the steep decline in the proportion of deaths related to circulatory system dysfunction, in 1997 this cause of death was still responsible for roughly two deaths in five among persons 60 and over.

Of course, the decrease in the proportion of deaths attributable to one cause inevitably leads to an increase in the proportion attributable to another cause. In particular, this is the case with deaths due to cancer, which saw their weight increase from 14% to 27% of all deaths for females and from 16% to 29% for males over the period from 1951 to 1996. Among all cancers,

---

[1] Attempts have been made to reconstruct different causes of death along etiological and anatomical lines (although not without some discontinuities), based on the different revisions of the ICD. On this subject, see Vallin, J. (1982). "Pour une approche démographique de la classification des décès" in ***Morbidité et mortalité aux âges adultes dans les pays développés***, Chaire Quételet 1982, Département de démographie, Université Catholique de Louvain, pp. 61-80.

[2] Bouvier-Colle, M. H. (1990). "Classement des maladies et causes de décès. La mort vue par les épidémiologistes," in Bouvier-Colle, M.-H., Vallin, J. and F. Hatton. ***Mortalité et causes de décès en France***, Les Éditions INSERM and Doin Éditeurs, Paris, France, p. 104.

Main Causes of Death According to the International Classification of Diseases (Accounting for 5% or More of Deaths in at Least One Five-year Period from 1951 to 1996)

Causes	Codes According to the ICD[a] Revision			
	6[b]	7[c]	8[d]	9[e]
1.0 - Cancers	**140 - 205**	**140 - 205**	**140 - 207**	**140 - 208**
1.1 Trachea, Bronchus and Lung	162 - 163	162 - 163	162	162
1.2 Breast (Females)	170	170	174	174
1.3 Prostate (Males)	177	177	185	185
1.4 Other Cancers				
2.0 - Diseases of the Circulatory System	**330 - 334** **400 - 468**	**330 - 334** **400 - 468**	**390 - 458**	**390 - 459**
2.1 Ischaemic Heart Diseases	420	420	410 - 414	410 - 414
2.2 Cerebrovascular Diseases	330 - 334	330 - 334	430 - 438	430 - 438
2.3 Atherosclerosis	450	450	440	440
2.4 Other Diseases of the Circulatory System				
3.0 - Diseases of the Respiratory System	**240 - 241** **469 - 527**	**240 - 241** **470 - 527**	**460 - 519**	**460 - 519**
3.1 Pneumonia and Influenza	480 - 493	480 - 493	470 - 486	480 - 487
3.2 Other Diseases of the Respiratory System				
4.0 - Other Causes				

[a] International Classification of Diseases.
[b] 6th revision, adopted in 1950.
[c] 7th revision, adopted in 1955.
[d] 8th revision, adopted in 1965.
[e] 9th revision, adopted in 1975.

Source: Statistics Canada, ***Causes of Death***, Vital Statistics, volume IV, catalogue no. 84-203, 1985.

lung cancer plays a predominant role in mortality. In 1996, it alone was responsible for 22% of all cancer deaths among females and 32% among males. Within a few years, it is predicted that approximately one woman in 25 and one man in 11 will contract lung cancer.[3] Generally, the increase in cancers, especially lung cancer, would appear to be largely due to smoking, since the risk of dying of cancer is much greater for a smoker and than for a non-smoker.[4]

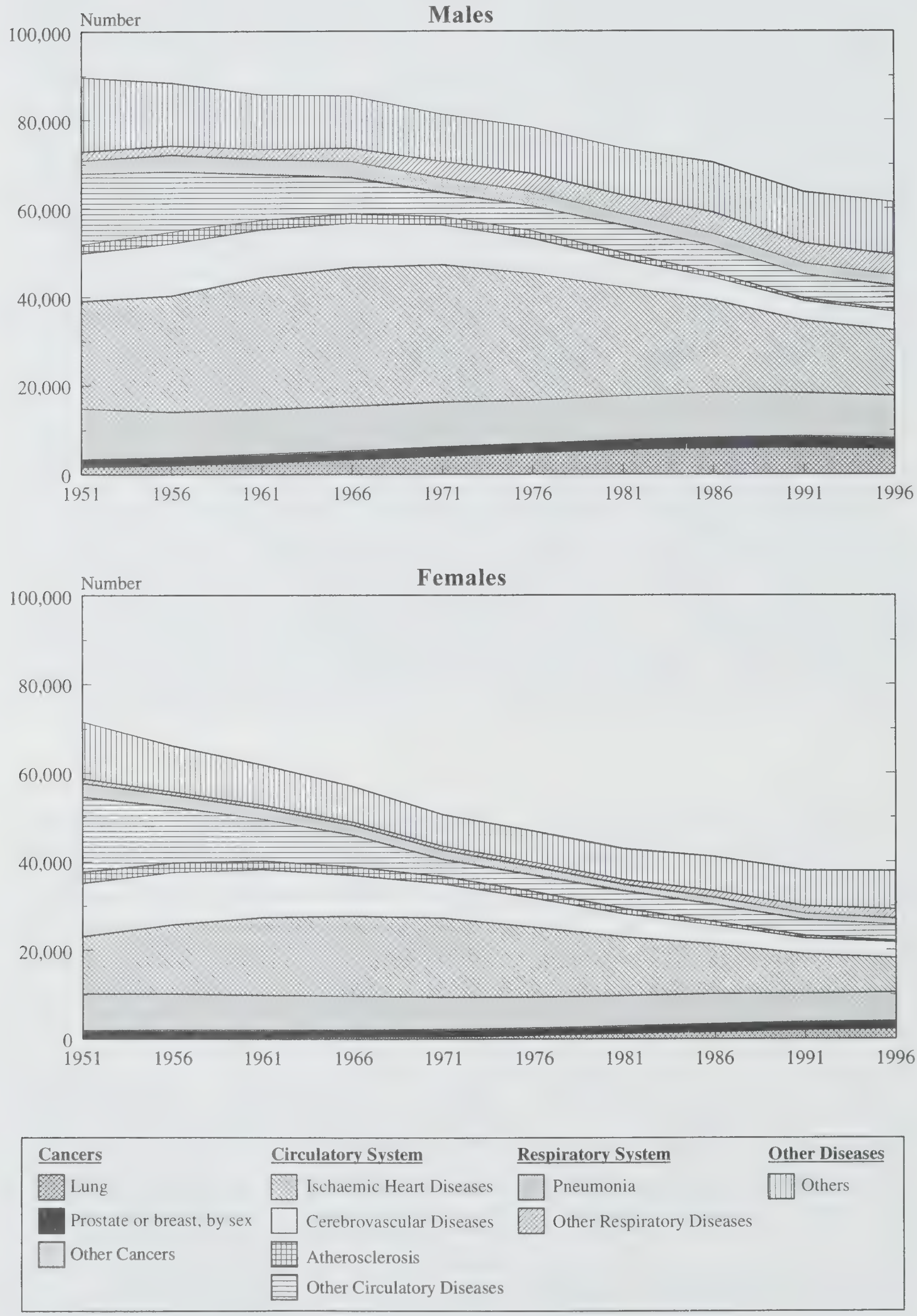
Prostate cancer in males is another form of cancer that increased significantly during the period from 1951 to 1996. This type of cancer accounted for 12% of cancer deaths in 1951, a figure which had risen to 14% by 1996. Among females, the proportion of deaths by breast cancer remained relatively stable over the period. Nevertheless, it is expected that approximately 11%

---

[3] Illing, E.M., Gaudette, L.A., McLaughlin, J.A. & M.J. Brite (1992). ***Cancer Statistics 1992***, Health Report, volume 4, no. 2, October.

[4] Mao, Y., Morrison, H., Nicol,R.D., Pipe, A. & D. Wigle (1988). "The Health Consequences of Smoking Among Smokers in Canada" in ***Canadian Journal of Public Health***, volume 79, September/October.

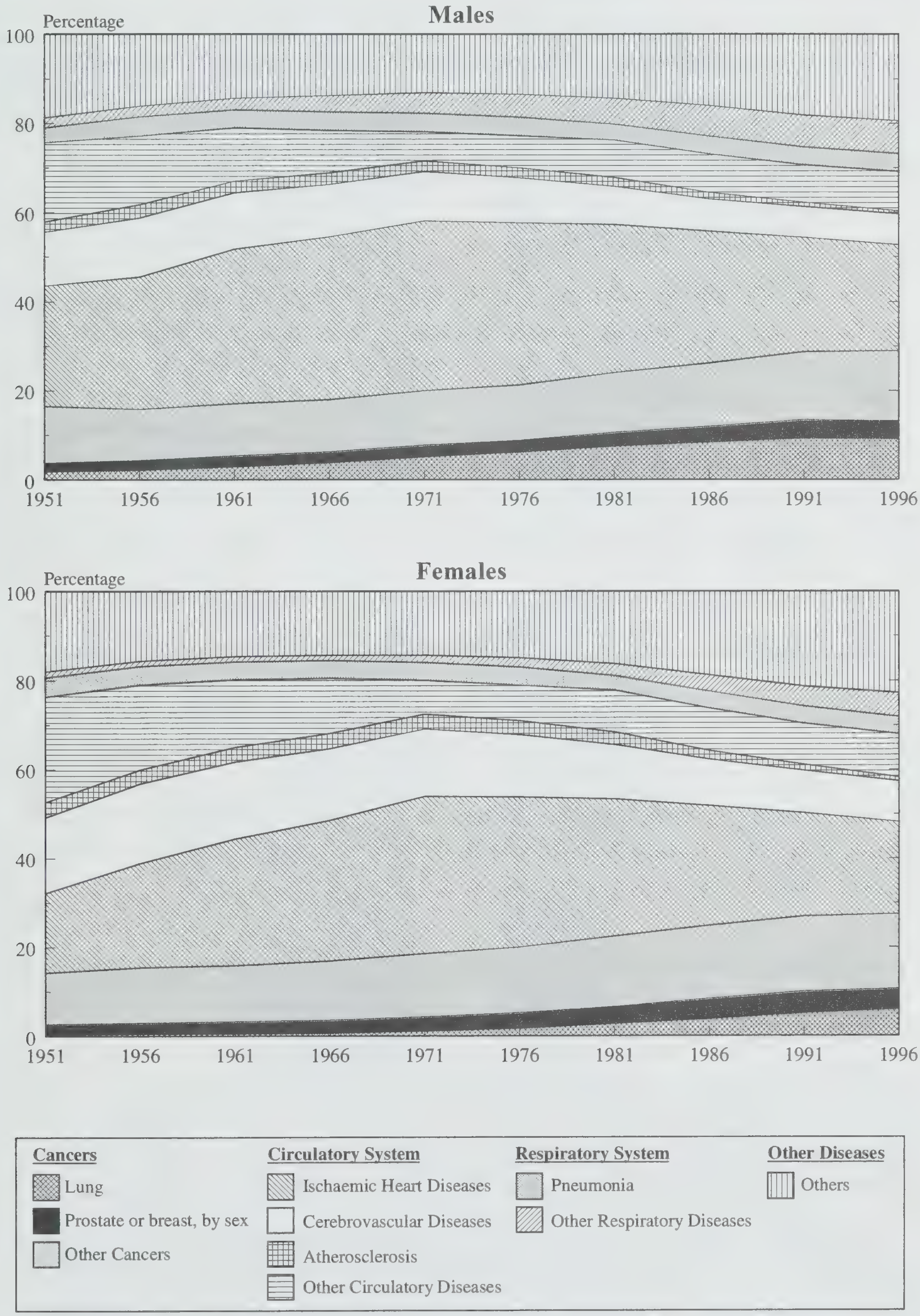
Figure 3. Trend in the Expected Number of Deaths Beyond Age 60 by Main Causes of Death and Sex, Canada, 1951-1996[1]



[1] Standardized with the 1976 population.

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

Figure 4. Trend in the Expected Deaths Beyond Age 60 by Weighted Main Causes of Death and Sex, Canada, 1951-1996[1]



[1] Standardized with the 1976 population.

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

of females will contract breast cancer over the course of their life. However, breast cancer is often less fatal than other forms of cancer; recent studies suggest that fewer than 5% of women with breast cancer will die from it.[5]

To a lesser extent, deaths caused by respiratory disorders also increased. They accounted for roughly 10% of all standardized deaths in 1996. And finally, a greater proportion of deaths fell into the "other" category in 1996 than in 1951. This relative increase is primarily due to the relative decrease in deaths attributable to diseases of the circulatory system.

Weight of the Major Causes by Age

As may be seen in Figure 5 for 1951, male mortality is higher at all ages and for all the major etiological categories. At all ages above 60 and for both sexes, diseases of the circulatory system are responsible for the majority of deaths. The share of deaths due to cancer tends to be much greater in the younger age groups than in the 90 and over group. ***Cancer is responsible for nearly 20% of all deaths at age 60-64 for males and 26% for females, compared with only 9% and 4% at age 90 and over for males and females respectively***. On the other hand, the share of deaths attributable to diseases of the respiratory system increases slightly with age, while the number of deaths attributable to other causes shows little variation from one age group to another.

In 1996, male mortality is still higher at all ages. However, the proportion of deaths in the older age groups is greater than in 1951 apart from deaths from cancer, which show essentially the same age distribution. As to deaths due to diseases of the circulatory system and the respiratory system, their proportion tends to increase with age. This phenomenon is especially apparent in the female population, where these two etiological groups account for respectively 18.3% and 19.0% of deaths of persons aged 90 and over, compared to 5.4% and 5.7% of deaths in the 60-64 age group.

Contribution of Causes of Death in the Trend in Life Expectancy at Age 60 and Over

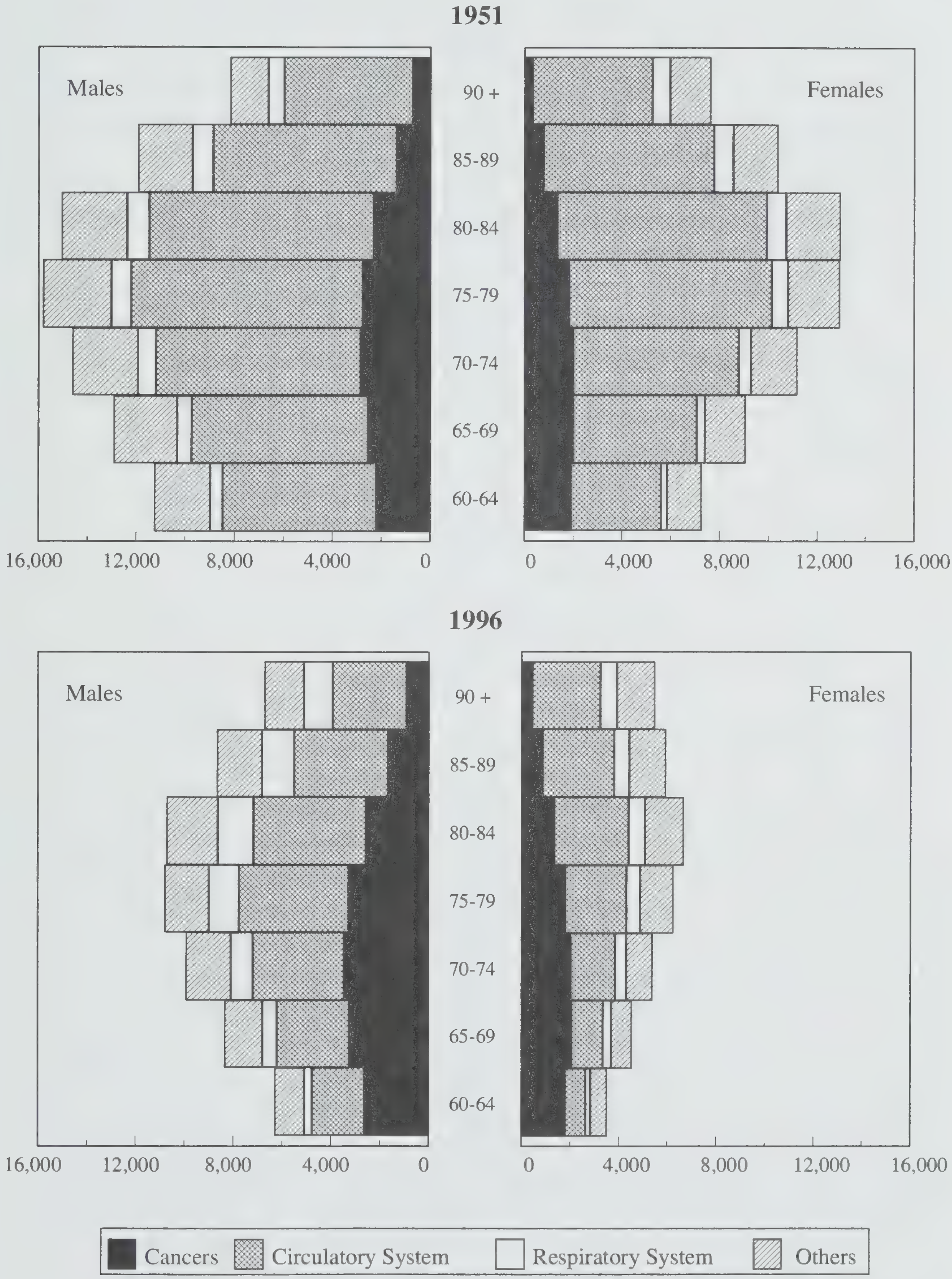
The number of deaths attributable to each cause provides a good idea of the contribution of that cause to the variation in mortality at the higher ages. But even when standardized (in this case, using the 1976 population as the standard), the calculation does not clearly show how the change in causes of death over time has affected life expectancy gains.

In order to assess the impact of causes of death on life expectancy gains, it is necessary to use a method that enables us to calculate the contribution

---

[5] Gaudette, L.A. (1998). "Breast Cancer and Mammography" in ***Canadian Social Trends***, no. 48, Spring.

Figure 5. Distribution of Expected Deaths[1] by Cause and Age Group, Canada 1951 and 1996



[1] Deaths were standardized to the 1976 Canadian population to facilitate comparison between years.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and analysis section.

Table 1. Contribution of Each Cause of Death to Life Expectancy Gain at Age 60 by Sex, 1951-1996

Causes	Males		Females	
	Contribution	%	Contribution	%
1.0 - Cancers	**-0.38**	**-10.7**	**-0.02**	**-0.4**
1.1 Trachea, Bronchus and Lung	-0.50	-14.3	-0.38	-6.2
1.2 Breast (Females)	...	...	-0.01	-0.2
1.3 Prostate (Males)	-0.08	-2.2	...	...
1.4 Other Cancers	0.20	5.8	0.36	6.0
2.0 - Diseases of the Circulatory System	**3.41**	**97.1**	**5.18**	**85.7**
2.1 Ischaemic Heart Diseases	1.32	37.5	0.97	16.0
2.2 Cerebrovascular Diseases	0.76	21.5	1.56	25.7
2.3 Atherosclerosis	0.15	4.4	0.35	5.8
2.4 Other Diseases of the Circulatory System	1.18	33.6	2.31	38.1
3.0 - Diseases of the Respiratory System	**-0.17**	**-4.8**	**0.10**	**1.7**
3.1 Pneumonia and Influenza	0.08	2.3	0.28	4.7
3.2 Other Diseases of the Respiratory System	-0.25	-7.1	-0.18	-3.0
4.0 - Other Causes	**0.65**	**18.4**	**0.79**	**13.0**
Total	**3.52**	**100.0**	**6.05**	**100.0**

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

of each cause to the increase in life expectancy while minimizing the effects due to interaction between causes. The approach that best meets these requirements is the one proposed by John H. Pollard[6] for breaking down life expectancy gains according to the various causes of death.

Table 1 shows a breakdown of life expectancy gains over the study period by the main etiological categories and subcategories. Among males, life expectancy gains at age 60 over the course of the study period are mainly due to the decrease in mortality related to diseases of the circulatory system. ***The gains for this cause amounted to 3.4 years, including 1.3 years for lower mortality due to ischaemic heart disease***. On the other hand, the increase in death by cancer resulted in a negative contribution to life expectancy equivalent to 0.4 years. This was also the case with deaths related to diseases of the respiratory system, which contributed negatively to life expectancy gains over the study period, resulting in a loss of 0.2 years.

For females, the decline in mortality due to the decrease in diseases of the circulatory system made an even greater contribution to life expectancy gains. ***During the period from 1951 to 1996, the decline in mortality for this etiological group caused female life expectancy to increase by 5.2 years***.

[6] Pollard, J.H. (1988). "Causes de décès et espérance de vie: quelques comparaisons internationales" in Vallin, J., D'Souza, S. & A. Palloni, ***Mesure et analyse de la mortalité: nouvelles approches***, proceedings of an international seminar on comparative changes in mortality, held in Sienna from July 7 to 12, 1987 under an initiative of the IUSSP with the co-operation of the Instituto di Stasistica of the University of Sienna, INED, pp. 291-311, paper 119.

Method

The breakdown of life expectancy is obtained by calculating the difference in mortality rates (m_x^i) at two given points in time (t, $t + a$) that a weighting factor (w) multiplies for each cause (i) at age (x). The sum of the differences of the weighted rates calculated by age for each cause (i) gives the contribution to life expectancy attributable to this cause for all ages combined. The contribution obtained, multiplied by age interval n, may thus have a negative impact on life expectancy when its value is less than zero or a positive impact when its value is greater than zero.

$$C_x^{(i)} \cong n\sum_x \left(m_x^{(i)t} - m_x^{(i)t+a}\right) \times W_x$$

$$W_x = \frac{\left({}_nP_x^{t+a}e_x^t + {}_nP_x^t e_x^{t+a}\right)}{2}$$

Where:

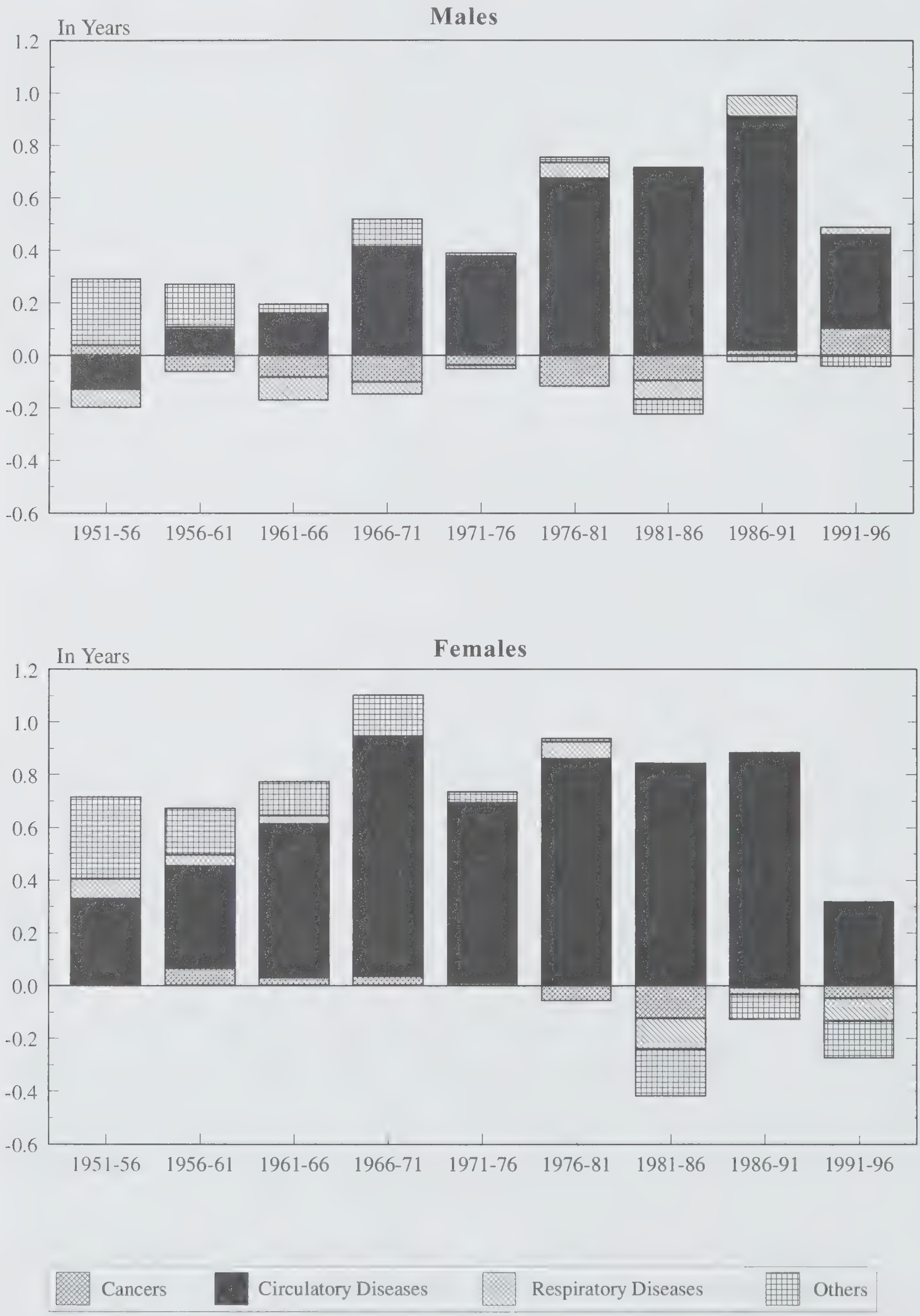
$$e_x^{t+a} - e_x^t \cong \sum_i C_x^{(i)}$$

$C^{(i)}$ = Contribution of cause i to life expectancy
$m^{(i)}$ = Mortality rate for cause i
P = Probability of survival to age x
e = Life expectancy at age x
a = Time interval (5 years)
n = Age interval (5 years)

Lastly, the sum of the contributions of each cause and of all age groups yields an approximate value for the total life expectancy gains at age x observed during period t and $t + a$.

Unlike for males, most of the gain is not attributable to the reduction in mortality for ischaemic heart disease, but rather to that for stroke, which results in a gain of 1.6 years. For females, cancer and diseases of the respiratory system have virtually no impact on how life expectancy at age 60 varies over time, whereas for males these causes of death have a negative impact.

Figure 6. Contribution of Causes of Death to the Variation in Life Expectancy, by Sex, 1951-1996



Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

Judging from only the positive contributions to the extension of life expectancy, the sole cause of death for which males show greater gains than females is ischaemic heart disease. ***For all other major causes of death, the drop in mortality results in greater gains in life expectancy at age 60 for females than for males. This is not surprising, considering that over the period, the total gains in life expectancy at age 60 are 2.5 years larger for females than for males***. As to the causes that play a negative role in the change in life expectancy, they affect males more than females. For example, lung cancer reduces male gains by half a year, while for females, the losses due to this disease are approximately 0.4 years.

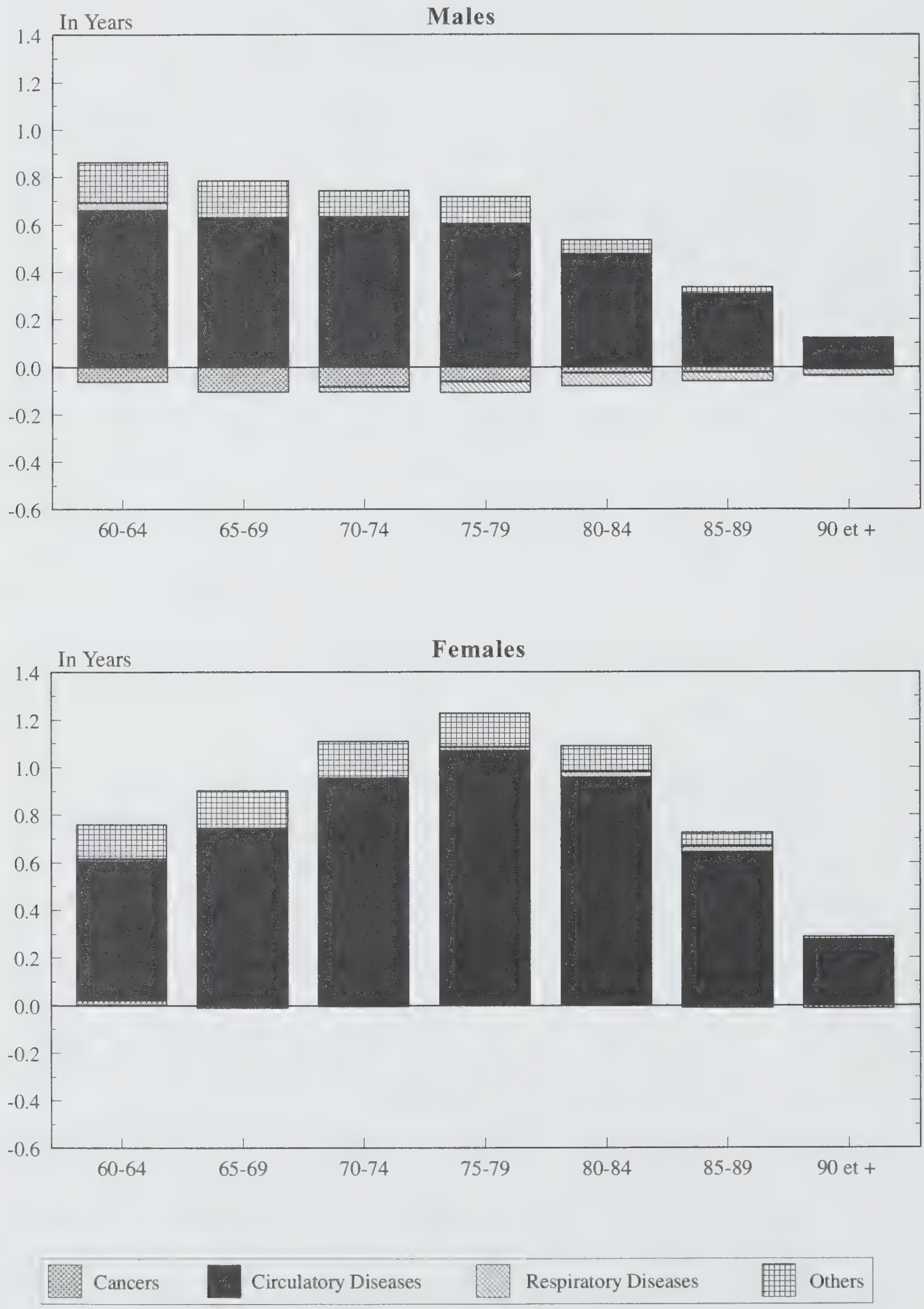
An analysis of life expectancy gains per five-year period shows that for males, the gains related to the decrease in deaths due to diseases of the circulatory system are relatively large starting in 1966-1971, a period when gains in life expectancy took off. For the periods 1951-1956 and 1956-1961, the gains are largely attributable to the "other diseases" category. This category has a positive effect that decreases over time and even becomes a negative effect on gains starting in 1981-1986. Except for the period 1951-1956 and the two most recent periods, cancer contributes negatively to the change in life expectancy, but that negative effect does not exceed 0.2 years, so that it never fully offsets the gains due to the decrease in deaths from diseases of the circulatory system. For females, the gains due to the drop in mortality related to this cause are by far the dominant ones for all periods. But starting in 1976, the negative effects associated with the other three etiological groups reduce life expectancy gains.

Contribution to Gains in Life Expectancy at Age 60 by Age Group

The size of life expectancy gains by cause of death also varies from one age group to another. The results presented in Figure 7 show that ***gains gradually decline with age for males but increase up to age 75-79 for females***. The contribution of reduced mortality for diseases of the circulatory system is positive for all age groups, but it is greater among the younger age groups (under 80). For males, only cancer offsets the gains for the 60-64 and 65-69 age groups, but starting with the 70-74 age group, mortality due to diseases of the respiratory system also contributes negatively to the variation in life expectancy at age 60 between 1951 and 1996.

Figure 7 also shows how much the reduction in mortality for diseases of the circulatory system contributes to gains in female life expectancy at age 60. That contribution is strongly positive for the 75-79 age group; unlike for males, ***more than one year was added to female life expectancy at age 60 solely by the reduction in mortality due to diseases of the circulatory system in females aged 75-79***. Cancer-related mortality has almost no effect on female life expectancy gains (-0.02), and this is confirmed for all age groups. Similarly, while mortality for diseases of the circulatory system has only a

Figure 7. Contribution of Major Causes of Death to Increase in Life Expectancy at Age 60 by Age Group and Sex, Canada, 1951-1996



Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

small positive effect on the life expectancy gains of males prior to age 70, the reduction in mortality associated with this cause makes a positive, if minor, contribution for all age groups among females.

Conclusion

The importance of the difference causes of death has changed over time. Some causes, by accounting for a lower number of deaths, have played a favourable or positive role in increasing life expectancy. This is especially the case with diseases of the circulatory system, which accounted for large gains in life expectancy at age 60 for males and females. Gains in life expectancy as a result of the reduction in mortality associated with this cause are especially striking for females between 1961 and 1991 and for males starting in 1966. Conversely, other causes have instead played an unfavourable or negative role, accounting for a greater number of deaths. This is the case with some cancers—especially lung cancer—that had a negative effect on the change in life expectancy at age 60 over the study period. Without the increase in mortality for lung cancer, life expectancy at 60 could have increased by an additional 0.5 years for males and 0.4 years for females.

Most of the life expectancy gains registered over the second half of the twentieth century among persons aged 60 and over are primarily due to the sharp decline in deaths associated with diseases of the circulatory system. It has resulted in a gain of 3.4 years for males and 5.2 years for females over the period from 1951 to 1996. These gains are enormous, considering that the total gain for males is 3.5 years and for females, 6.1 years. Even so, this etiological category remains the main cause of death. For both males and females, it is responsible for more than 40% of deaths.

FAMILY AND DEMOGRAPHIC CHANGES AND THE ECONOMIC WELL-BEING OF PRESCHOOL-AGE CHILDREN IN CANADA, 1981-1997

By Don Kerr and Alain Bélanger

Over the last few decades in Canada, the familial circumstances of couples with young children have changed substantially. Changes in the number and timing of children, the formation and dissolution of unions, and an increase in the labour force participation of women have all had an impact on the family life and economic conditions experienced by Canadian children. In this context, we thought it would be useful to examine the importance of these changes to the economic conditions faced by children between 1981 and 1997.

In examining the evolving economic conditions faced by Canadian children, the present study places particular emphasis on families with preschool-age children. In a classic study on the interrelations between family life, the world of work and demographic change, Valerie Oppenheimer (1982) demonstrated that families with very young children had the greatest chance of experiencing what she termed the "life-cycle squeeze". With the arrival of young children, many families go through economic tensions, as consumption patterns often approach or even exceed family purchasing power. Similarly, parents have to cope with severe demands on their time as they strive to meet the needs of young children while one or even both spouses are working outside the home, often full time. Since families with preschoolers are more vulnerable than other families to tensions associated with this "life-cycle squeeze", the present study focuses solely on families with at least one child aged 5 or under.

Several different analyses have considered the impact of family and demographic change on the economic conditions affecting children (Dooley, 1988, 1991; McQuillan, 1992; Picot and Myles, 1996). The present study updates this research to 1997, while shifting the emphasis to families with very young children. We begin by describing recent trends in demographic and family change and establish a link between these changes and shifts in the economic well-being of young children. Then we use a multivariate analysis to evaluate the interrelations between trends in family and demographic composition and characteristics, and trends in economic well-being over the 1981-1997 period. An interesting issue addressed in this context is whether there is any evidence to suggest that, for families with preschool-age children, this "life-cycle squeeze" has tightened in recent years.

Demographic and Family Changes

In recent decades, various offsetting changes in the family life of Canadians have had an impact on the economic well-being of Canadian children. Among the most important demographic changes to have a net beneficial impact on the economic well-being of children has been the well-documented decline in fertility that followed the baby boom (Romaniuc, 1984). By itself, a decrease in the number of children per family has direct economic ramifications, since it means fewer dependent youths per household and thus a decline in the number of claimants on family income (Dooley, 1989; Brouillette and al., 1990).

There has also been an upward shift in the age pattern of fertility (Ram, 1990; Beaujot and al., 1995; Bélanger, 1999). This may be associated with a higher level of economic well-being, as adults delay having children until later in their reproductive years, when economic resources are generally greater (Oppenheimer, 1988; Grindstaff and al., 1989).

While fertility has declined, non-marital fertility as a proportion of total births has risen steadily. For example, only about 14% of all births were to unmarried mothers in 1981, compared with 36% in 1996 (Beaujot, 2000). This growth in the relative number of non-marital births is not due to an increased incidence of fatherless births but rather to the growing popularity of common-law unions in Canada. For a growing number of Canadians, common-law union is preferred to legal marriage, even if there are children. While common-law partners continue to have a lower fertility rate than married couples (Dumas and Bélanger, 1997), this growing popularity of common-law unions directly explains the above-mentioned trend in non-marital fertility.

According to the 1996 Census, 14% of all couples were living in a common-law union, more than double the 1981 figure of 6%. Among younger cohorts, this change is far more dramatic. For example, over one half of first unions formed since 1985 were common-law unions rather than marriages (Dumas and Bélanger, 1997). This fundamental change in nuptiality has important ramifications for children, as common-law unions are also far less stable than legal marriages, even when they include children (Marcil-Gratton, 1993; Marcil-Gratton and Le Bourdais, 1999). The rates of marital dissolution have been rising in recent years (for both legal marriages and cohabiting unions).

As in the case of births to single parents, there is ample evidence to suggest that separation and/or divorce cause considerable economic hardship for both women and children (Ross and Shillington, 1989; Dooley, 1991; Rashid, 1994). While the long-term economic repercussions of union dissolution are generally not as great as those faced by single women who have births without a partner, in general, children experience significant economic hardship as a result of their parents' inability to continue their relationship (McQuillan, 1992). As a

consequence of both the lower proportion of married couples and the higher rates of union dissolution, the proportion of families headed by a single parent has increased. According to the 1996 Census, fully 22% of families with at least one child in Canada are headed by a lone parent, compared with 17% in 1981. Furthermore, in recent decades the average age of lone parents has declined steadily, as fewer result from widowhood and more from union dissolution and marital breakdown (Peron and al., 1999).

A further change that influences the dynamics of family life in Canada is greater labour force participation by women. Female participation rates reached 40% in the early 1970s and are now approaching 60%. The proportion of women in the paid labour force has climbed substantially among both married and non-married women (Gunderson, 1998). While women with young children have always had lower participation rates than women without children, they are the ones who have experienced the most significant changes over the past few decades. A decline in young males' relative income during the 1970s and 1980s, combined with rising material aspirations, made it more necessary for couples to be able to count on two incomes (Martel and Bélanger, 1999). This adaptation to new economic circumstances has forced young couples to postpone their childbearing plans and reduce their fertility expectations. In terms of fundamental life-cycle demographic events, more and more women are taking paid employment, opting for work outside the home and additional income rather than additional children.

It has been shown in the literature that the above-mentioned changes, taken as a whole, have had a net positive impact on the economic well-being of Canadian families with children (Dooley, 1989; Kerr, 1992; Picot and Myles, 1996). Irrespective of the well-documented growth in lone-parent families, the family and demographic changes described above have had a net positive impact on the economic well-being of Canadian children. The present study updates this research on the basis of family and demographic change and income trends from 1981 to 1997, focusing exclusively on families with at least one preschool-age child.

Recent Trends, 1981-1997

Table 1 summarizes many of these changes using 1981, 1989 and 1997 data on economic families from the Survey of Consumer Finances. This survey has long provided information on a variety of socio-economic and demographic characteristics for a sizable sample of Canadian families.

As has been well documented, the largest part of the fertility decline in Canada occurred during the 1960s and 1970s; it is consequently not reflected in Table 1. For example, by the early 1970s, Canada's total fertility rate (TFR) had already fallen below replacement, and it has hovered between 1.85 and its current low of 1.54 ever since. Although the largest part of Canada's fertility

Table 1. Distribution of Families with Pre-school Age Children by Selected Variables, Canada, 1981-1997

Variables	1981	1989	1997
Number of Children			
- One Child	35.9	36.2	39.2
- Two Children	41.7	41.4	39.1
- Three Children	15.9	16.4	16.2
- Four or More Children	6.5	6.0	5.5
Age of Reference Person			
- Under 25	18.2	11.7	10.5
- 25-29	33.9	30.2	22.5
- 30-34	29.2	33.7	33.6
- 35-39	11.9	16.0	21.9
- 40 and Over	6.8	8.4	11.5
Presence of Parents			
- Dual Parent	90.1	88.1	82.9
- Single Parent	9.9	11.9	17.1
Female Lone Parent	8.7	11.0	15.8
Number of Earners			
- None	4.5	5.7	9.5
- One	40.6	27.7	28.8
- Two or More	54.9	66.6	61.7

Source: Statistics Canada, Survey of Consumer Finances, 1982, 1990 and 1998.

decline had already occurred by 1981, average family size has continued to decline, albeit only slightly, and the timing of childbearing continues to shift upward toward older ages.

Among families with preschool-age children, the proportion with only one child increased slightly from 36% in 1981 to 39% by 1997. While the proportion of families with three or more children fell dramatically in earlier decades, it has generally remained stable in recent years.

In Table 1, the data on "age of reference person", which for the purposes of this article is defined as the age of the mother in all but male lone-parent families, suggest a continued trend toward delayed childbearing. Through the 1980s and 1990s, the proportion of families headed by a young parent continued to decline. By 1997, only about a third of all families with preschoolers in Canada were headed by a mother in her twenties. This is down from over 50% in 1981.

A further change of importance to the economic well-being of families with young children has to do with recent trends in the presence of parents. Table 1 reflects a decline in the proportion of two-parent families with

preschoolers from 90% in 1981 to only 83% by 1997. About 1 in 10 families with preschoolers was headed by a lone parent in 1981, compared with about 1 in 6 in 1997.

While this growth in the relative number of lone-parent families implies a continuation of past trends throughout the 1981-1997 period, the same generalization is not true for the number of earners per Canadian family. Overall, there was a substantial increase in the proportion of families with two earners between 1981 and 1989 (moving away from the traditional situation of having only one earner per family). However, this trend reversed itself between 1989 and 1997, as the proportion of two-earner families declined. In 1981, 55% of all families with preschoolers had two or more earners, compared with 67% in 1989 and 62% in 1997.

Accompanying this shift toward two-earner families has been an increase in the relative number of families with no labour force participation. The proportion of earnerless families with preschoolers doubled from 5% in 1981 to 10% in 1997. In general, the gains resulting from the increased number of two-earner families have been at least partially offset by an increased proportion of families with no earners. This is probably associated with the aforementioned growth in the number of female lone-parent families.

Family and Demographic Change and Economic Well-Being

The present study uses income data from the Survey of Consumer Finances (SCF). The SCF is conducted each April as a supplement to the Canadian Labour Force Survey. It was designed primarily to provide reliable estimates on average income and income distribution for individuals and families. In recent years, the SCF has used a representative sample of approximately 35,000 households, or 65,000 individuals. The SCF collects detailed information on various socio-demographic and labour force characteristics of Canadian families. Its response rate is of about 80%.

When all figures are expressed in constant 1997 dollars, it is possible to derive comparable income statistics for families with preschoolers for the entire 1981-1997 period. Total family income is, of course, a flawed indicator of economic well-being. To measure economic well-being, one of the things we must do is adjust income data to take account of economic need. As merely a simple example, there is little debate that larger families require larger incomes to attain a comparable level of overall economic well-being relative to smaller households.

A commonly employed method of accounting for such differences in economic need is to examine the "income-to-needs ratio" of different families. This ratio is computed by dividing total family income by some sort of standard income, representing the level of income required to meet the basic economic

Table 2. Economic Well-being of Families with Pre-school Age Children by Selected Variables, Canada, 1981-1997

Variables	1981	1989	1997
Average Family Income	51,542	56,524	54,245
Average Income to Needs			
Weighted Average	1.87	2.00	1.91
Number of Children (Under 18)			
- One Child	2.07	2.13	2.05
- Two Children	1.83	1.99	1.91
- Three Children	1.67	1.84	1.74
- Four or More Children	1.58	1.78	1.49
Age of Reference Person			
- Under 25	1.50	1.45	1.15
- 25-29	1.91	1.83	1.76
- 30-34	1.96	2.11	2.02
- 35-39	2.07	2.31	2.13
- 40 and Over	1.98	2.30	2.17
Presence of Parents			
- Dual Parent	1.96	2.13	2.10
- Single Parent	1.04	1.04	1.01
Female Lone Parent	0.94	0.97	0.93
Number of Earners			
- None	0.49	0.63	0.57
- One	1.62	1.54	1.45
- Two or More	2.17	2.31	2.33

Source: Statistics Canada, Survey of Consumer Finances, 1982, 1990 and 1998.

needs of that family. As there is no solid consensus in the literature as to the most appropriate standard to be employed in the definition of economic need, the present study has selected Statistics Canada's 1992 low-income cut-offs as the denominator for this ratio. Not surprisingly, the cut-offs are weighted so that larger families require higher incomes to meet their economic needs, while "economies of scale" also kick in as size increases. Furthermore, the cut-offs are weighted differently depending on whether the family lives in a major metropolitan area, a smaller city, or a rural area.

Table 2 presents average family income and the income-to-needs ratios for 1981, 1989 and 1997 (with all figures converted to constant 1997 dollars). ***Overall, the data point to an increase in economic well-being during the 1981-1989 period, followed by a slight decline between 1989 and 1997. Average income rose from $51,542 in 1981 to $56,524 in 1989, and then fell again to $54,245 by 1997. This translates into a shift in the income-to-needs ratio from 1.87 in 1981 to 2.0 in 1989, and then to 1.91 in 1997***. This is true overall for all families with preschoolers, and generally true across most categories of the family and demographic variables included in Table 2.

When we review the trends for the different variables listed in Table 2, it should come as no great surprise that families with a larger number of children are found to generally experience lower levels of economic well-being. For example, in 1997 the income-to-needs ratio was 1.49 for families with four or more children and 2.05 for families with only one child. Similarly, Table 2 demonstrates the clearly advantageous circumstances faced by families headed by older parents. Consequently, it is anticipated that ***recent trends toward smaller family size and deferred childbearing have had a beneficial impact on the economic circumstances of Canadian families***.

Concerning the economic hardships typically associated with female lone-parent status, the figures in Table 2 are certainly consistent with what has been documented elsewhere. On average, female lone-parent families with preschoolers have an income-to-needs ratio of less than 1.0; this implies that their income, on average, is actually lower than Statistics Canada's low-income cut-offs. While two-parent families enjoyed some gains during the 1981-1997 period, female lone-parent families with preschoolers had a slightly lower income-to-needs ratio in 1997 than in 1981. It is noteworthy that the economic conditions of lone-parent families with preschoolers are somewhat worse than those experienced by lone-parent families in general (not shown in Table 2), as single mothers with very young children are known to experience serious obstacles in achieving earnings beyond transfer payments (McQuillan, 1992).

Also obvious in Table 2 are the economic benefits of the two-income family. Families with no earners are doing particularly poorly, while the average income-to-needs ratio is somewhat higher for single-earner families. Over the 1981-1997 period, families with one earner actually experienced a decline in average income to needs, from 1.62 in 1981 to 1.45 by 1997. On the other hand, two-earner households did relatively well over this same period, with the ratio increasing from 2.17 in 1981 to 2.33 by 1997.

As indicated in Table 1, the number of two-earner households increased during the 1981-1997 period as a whole, while the number of single-earner families declined slightly from 41% to 29%. In this context, one can speculate as to the impact that downward pressures on the income-to-needs ratio for families with only one earner might have on the observed increase in the number of two-earner households. It is quite possible that many couples have adapted to downward pressures in individual market earnings by increasing their family's paid employment, even within families with preschool-age children. This life-cycle squeeze on both family economic resources and time probably leaves many new parents with very difficult decisions on how to divide their time between child care and paid employment.

In summary, the average level of economic well-being of families with preschool children varies across several family and demographic variables. We have shown that the average income-to-needs ratio was related to:

(1) the presence of parents (two parents as opposed to one);
(2) the age of the parents (as an indicator of the timing of fertility);
(3) the number of children in the family, and;
(4) the number of earners who contribute to family income.

A Decomposition of Recent Trends

The relationships presented so far have been exclusively bivariate and tell us relatively little about the comparative importance of each variable in explaining recent trends in income to needs ratio. For example, what is the impact of recent trends in the average number of earners per household, after we control for changes in the presence of parents (i.e., the growth in lone-parent families)? To answer this type of question, we can use a multivariate model to decompose recent trends. This decomposition provides some insight into the net impact of selected variables, after we control for the other variables included in Table 2 and any other variables that might be considered important in explaining changes in family economic well-being.

Through a series of regressions and comparisons of results of "nested" models, the multivariate analysis attempts to identify the relative importance of selected family, demographic and non-demographic factors in recent trends in economic well-being (see box). The present analysis includes all the variables considered thus far and introduces additional information on the occupation and education of parents to control for socio-economic differentials. Table 3 lists the variables included in the decomposition model.

Table 3. Variables Included in the Multivariate Model

Family / Demographic Variables

Number of Children
- One child, two children three children, four or more children

Age of Reference Person (Mother's Age or Male Lone Parent)
- Under 20, 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40 + years

Presence of Parents
- Dual parent, female lone parent, male lone parent

Number of Earners
- None, one, two, three or more

Socio-economic

Education (Mother's Education or Male Lone Parent)
- Less than high school, high school completion, some post-secondary, completed post-secondary

Occupation (Mother's Occupation or Male Lone Parent)
- 1981 Occupation Classification

Year
- 1981, 1989, 1997

Methodology: Decomposition of Trends in Economic Well-Being, 1981-1997

The present multivariate analysis works with a merged data set (N=18,872) for three years (1981, 1989, 1997). Through a series of regressions, it attempts to identify the relative importance of selected demographic and non-demographic factors. The full model to be estimated is:

$$\log(IN_{ti}) = \beta' x_{ti} + \xi_{ti}$$

$$t = 1981, 1989, 1997$$

where the dependent variable log (IN_{ti}) is the logarithmic transformation of the income-to-needs ratio of the ith family in year t,c_{ti} is a vector of explanatory variables (see Table 3), ß is a vector of corresponding parameters, and ξ_{ti} is an error term assumed to have zero mean and constant variance across i and t. With the full model ($R^2 = 0.29$), all selected variables had a statistically significant impact on the dependent variable, with a few minor exceptions (e.g., a few of the dichotomous variables introduced in estimating the impact of occupation).

The regression coefficients associated with the year variables are particularly useful for estimating the relative importance of specific variables or sets of variables in recent trends. These dichotomous variables are intended to capture differences in log (IN_{ti}) across years after we control for all other factors in the analysis. In estimating the relative importance of any single demographic or non-demographic factor in changes observed in the average income-to-needs ratio over time, one can simply exclude it from the full model and consider the change observed with respect to the coefficients on the year variables. The impact of a specific variable can be estimated as the difference between the effect identified with the revised model (after the variable of specific interest is excluded) and the effect identified with the full model. This procedure gives a "conservative" estimate, in that it suggests only the marginal effect of that factor, controlling for all others.

Table 4 summarizes the impact of each family and demographic variable separately, as well as the socio-economic controls (i.e., occupation and education). To illustrate how the results can be interpreted, the first row tells us that change in the presence of parents contributed to an estimated 2.6% decline (100.0 – 97.4) in the average income to needs ratio of families with preschoolers during the 1981-1989 period (after we control for all other variables in the model) and an estimated decline of 4.3% for the entire 1981-1997 period (100.0 – 95.7). These results also tell us that, for the 1981-1997 period, change in the presence of parents was more important than any other single factor included in the model in explaining recent trends in economic well-being.

Table 4. Effect of Change in Selected Variables on the Mean of the Income to Needs Ratio of Families with Pre-school Age Children

Variables	1981	1989	1997
A. Family Demographic			
- Presence of Parents	100.0	**97.4**	**95.7**
- Number of Children	100.0	100.2	101.1
- Timing	100.0	101.5	102.1
- Number of Earners	100.0	102.2	**103.0**
B. Socio-economic			
- Occupation	100.0	99.6	98.6
- Education	100.0	101.9	**103.7**

Source: Statistics Canada, Survey of Consumer Finances, 1982, 1990 and 1998.

For the purposes of this study, the selected model includes education and occupation of mothers, in all but male lone-parent families. It was expected that the significant changes that had occurred in the educational attainment and occupation classification of Canadian women in recent years would have a net positive impact on the economic conditions experienced by families with young children. After we controlled for these variables, the main factors were still the family and demographic variables listed in Table 3.

Table 4 summarizes the results of this decomposition, for both the 1981-1989 and 1981-1997 periods. The data indicate that ***change in the presence of parents is more important than any other single factor considered in the model. By itself, change in the presence of parents accounted for an estimated 4.3% decline in the average income-to-needs ratio of families with preschoolers between 1981 and 1997***. The indirect impact of increasing rates of marital dissolution in Canada (and the resulting growth in the number of female lone-parent families) is a real reduction in the average income-to-needs ratio of families with very young children.

Over the entire period, the effects of change in the other family and demographic variables are largely in line with expectations. For example, both the number of children and the "timing of fertility" have a net positive effect on average income to needs ratio, although this procedure suggests that their impact is relatively modest.

When we controlled for all other variables in the model, we observed that the number of earners per family had a positive effect over the entire period. ***Change in the number of earners per family is responsible for an estimated 3% increase in average income to needs ratio***. Moreover, this variable shows a net positive impact for both the 1981-1989 and 1989-1997 periods. For the latter period, this finding contrasts with what was found in the simple

bivariate relationships. Between 1989 and 1997 there was a slight decline in the number of earners per family and an increase in the relative number of families with no earners at all (see Table 1), trends that may be related to an ongoing increase in the relative number of lone-parent families. Controlling for that trend allows the expected positive effect of the changes in the number of earners per family to emerge throughout the period.

For the remaining variables in the model (i.e. education and occupation), the results indicate a slight negative effect due to occupational change, while change in educational attainment is associated with an increase in the average income to needs ratio. As the positive effect of education is greater than the negative impact of recent changes in the occupational profile of women with preschoolers, the overall impact of these controls is to slightly improve the economic situation for families with young children. Among all the variables presented in Table 4, gains in the educational attainment of Canadian women in recent years appear to have the largest positive impact on the income of families with preschoolers

Discussion and Conclusion

For the 1981-1997 period, the present study reveals several ongoing changes in the familial circumstances of Canadians with young children. These changes include a shift in the timing of childbearing toward older ages, a slight increase in the relative number of one-child families, an ongoing growth in the proportion of female lone-parent families, and some rather noteworthy shifts in the number of earners per family.

Overall, Canadian families with preschool-age children enjoyed a moderate increase in their average level of economic well-being over an extended period of time. The average income-to-needs ratio for Canadian families with preschoolers increased from 1.87 in 1981 to a high of 2.00 in 1989, only to drop to 1.91 by 1997. While this indicator of economic well-being is not very different in 1997 than it was in 1981, this should not obscure the fact that there has been a whole series of offsetting family/demographic changes with direct economic ramifications for Canadian children during this period.

The most harmful trend, from the point of view of meeting the economic needs of children, has been a steady rise in the number of lone-parent families. As indicated in this analysis, the growing proportion of families headed by lone parents appears to be the single most important demographic change shaping the economic circumstances of very young children during the 1981-1997 period.

While family and demographic change is fundamental to the study of the economic conditions affecting families and individuals in Canada, it is also

recognized that that change can provide only a partial explanation of past trends. As Picot and al. (1998) stated in a comprehensive analysis of 1973-1995 low-income trends in Canada, it is preferable to avoid focusing too narrowly on family and demographic events to the exclusion of broader "social and economic events that might influence the availability of jobs, employment earnings, and other sources of market income". While shifting the emphasis to a much broader perspective is beyond the scope of the present study, a few general concluding comments appear to be in order.

Returning briefly to Oppenheimer's (1982) emphasis on the so-called "life-cycle squeeze", we note that these trends in individual earnings would seem to suggest little improvement in the economic tensions often experienced by Canadians during the earliest years of the family life cycle. As Oppenheimer indicated, the birth and care of children are often associated with considerable economic tensions and substantial time demands, as parents attempt to meet simultaneously the needs of very young children and the demands of work outside the home. As seen in the present study of families with preschoolers, the 1981-1997 period witnessed both an increase in the number of two-earner families and a stagnation or real decline in individual earnings. It appears that the household reaction to reduced individual earnings has been to increase the number of earners. Many couples appear to have adapted to downward pressures in individual market earnings by increasing their involvement in paid employment, even when they have the added time demands of raising preschool-age children.

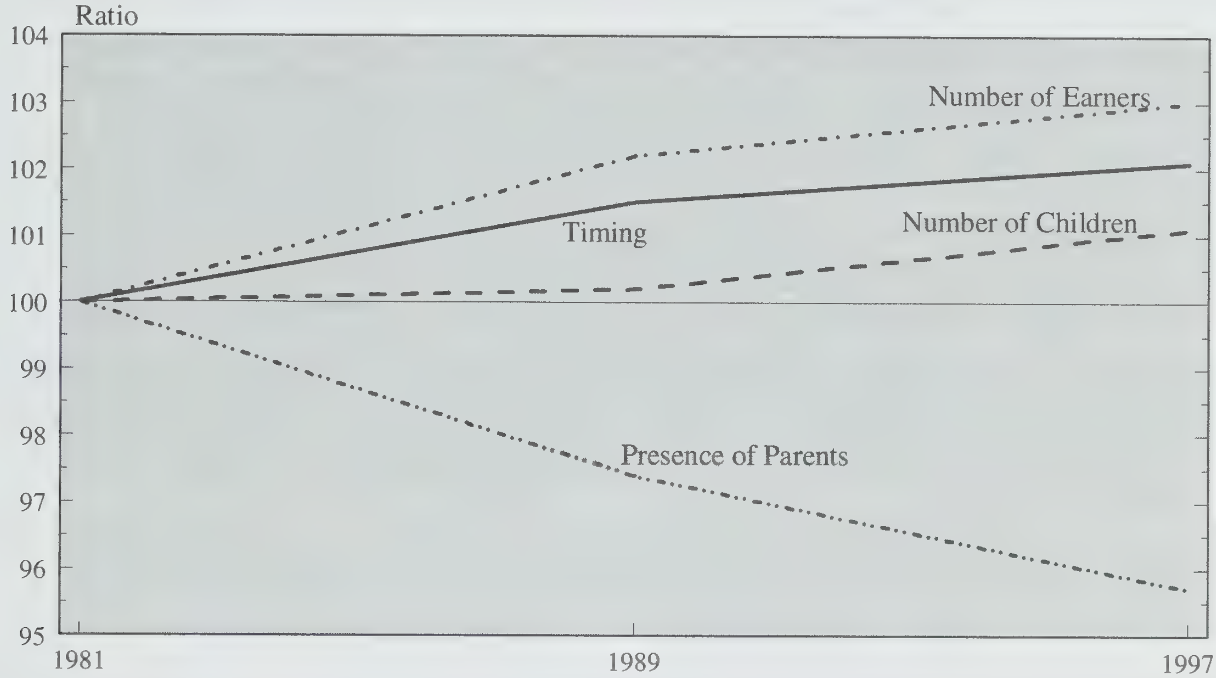
In conclusion, it is useful to return to the results of the decomposition discussed earlier, as summarized in Figure 1. After examining the income statistics for the 1981-1997 period and interpreting the results of the present analysis, we drew the following conclusions:

(i) The average level of economic well-being of families with preschool-age children increased only slightly during the 1981-1997 period;

(ii) Recent change in the presence of parents is the most important family change to influence the economic well-being of families with preschool-age children over the 1981-1997 period. Overall, this change has had a negative impact on the average level of economic well-being of young children, with continued growth in the relative number of female lone- parent families;

(iii) Delayed childbearing and smaller family size have a positive impact on the economic well-being of children, although over the 1981-1997 period, these changes were not nearly as important as the aforementioned trend in lone parenthood. Having a child early in one's adult years or having many children continues to be associated with a lower level of economic well-being, and recent

Figure 1. Effect of Selected Family / Demographic Factors, 1981-1997



Source: Statistics Canada, Survey of Consumer Finances, 1982, 1990 and 1998.

trends toward lower and delayed fertility are responsible for slight gains in the average income available to families with young children;

(iv) Change in the average number of earners per family had a net positive impact on the economic well-being of preschool-age children during the 1981-1997 period;

(v) The overall impact of family and demographic change was relatively modest in the 1981-1997 period, if we consider the offsetting impact of all the above-mentioned factors. While recent trends in lone parenthood have had an important negative impact on the average level of economic well-being of young children, this has been offset by ongoing changes, of lesser importance, in the timing and level of childbearing and an increase in the number of earners per family.

There is little evidence, in recent years, of a slowdown in the growth of female lone-parent families; if anything, we have seen acceleration. Total divorce rates may have stabilized in the recent past around 35%, but the number of common-law unions is still rising. From year to year, the proportion of children born to parents living common-law is increasing. Even when children are present, these unions remain, on average, less durable than legal marriages. All these factors suggest a possible continuing increase in the number of lone-parent families.

With respect to the future fertility behaviour of Canadians, many demographers doubt that the total fertility rate will fall much below its historic low of 1.5 children per woman, set in 1998. On the other hand, there are no indications that the rate will increase in the near future. With respect to the timing of childbearing, we are obviously approaching an upper limit in the age at which Canadian women can start their families. As to future growth in the number of two-earner households, there are obviously upper limits there too, as the labour force participation of women is quickly approaching that of their male counterparts. Overall, it may very well be that the impact of family and demographic change in the future will be dominated by continued growth in the number of lone-parent families, without the offsetting impact of further fertility decline and/or increased involvement of parents in work outside the home.

BIBLIOGRAPHY

Beaujot, R. (2000). ***Earning and Caring in Canadian Families***, Broadview Press, Peterborough, Ontario.

Beaujot, R.; Gee, E.; Rajulton, F. & Z. Ravanera (1995). ***Family Over the Life Course***, Statistics Canada, Ottawa, catalogue no. 91-543E.

Bélanger, A. (1999). ***Report on the Demographic Situation in Canada 1998***, Statistics Canada, Ottawa, catalogue no. 91-209-XPE.

Brouillette, L.; Felteau, C.; Lefebvre, P. & A. Pelletier (1990). "L'évolution de la situation économique des familles avec enfants au Canada et au Québec depuis 15 ans", ***Cahiers Québecois de Démographie***, 19 (2), pp.241-271.

Dooley, M. (1988). "An Analysis of Changes in Family Income and Family Structure in Canada between 1973 and 1986 with an Emphasis on Poverty among Children", McMaster University, Hamilton, QSFP Research Report, no. 238.

Dooley, M. (1991). "The Demography of Child Poverty in Canada: 1973-1986", ***Canadian Studies in Population***, 19 (1), pp. 53-74.

Dumas, J. & A. Bélanger (1997). ***Report on the Demographic Situation in Canada 1996***, Statistics Canada, Ottawa, catalogue no. 91-209-XPE.

Fox, J. (1984). "Linear Statistical Models and Related Methods", Wiley Series, ***Probability and Mathematical Statistics***, John Wiley and Sons, New York.

Grindstaff, C.; Balakrishnan, T.R. & P. Maxim (1989). "Life Course Alternatives: Factors Associated with Differential Timing Patterns in Fertility among Women Recently Completing Childbearing, Canada 1981", ***Canadian Journal of Sociology***, 14(4), pp. 443-460.

Gunderson, M. (1998). ***Women and the Canadian Labour Market***, Toronto, ITP Nelson.

Johnston, J. (1984). ***Econometric Methods***, New York, McGraw-Hill.

Kerr, D. (1992). "Life Cycle Demographic Events and Economic Well Being of Children", Ph.D Thesis, University of Western Ontario, London, Ontario.

Marcil-Gratton, N. (1993). "Growing up with a Single Parent: A Transitional Experience? Some Demographic Measurements from the Children's Point of View", Hudson, J. & B. Galaway (eds.), ***Single Parent Families***, Perspectives on Research and Policy, Toronto, Thompson.

Marcil-Gratton, N. & C. Le Bourdais (1999). ***Custody, Access and Child Support: Findings from the National Longitudinal Survey of Children and Youth***, Research Report Child Support Team CSR-1999-3E, Department of Justice, Canada.

McQuillan, K. (1992). "Falling Behind: the Income of Lone Mother Families, 1970-1985", ***Canadian Review of Sociology and Anthropology***, 20(4), pp. 51-523.

Oppenheimer, V. (1982). ***Work and the Family: A Study in Social Demography***, New York, Academic Press.

Péron, Y.; Desrosiers, H.; Juby, J.; Lapierre-Adamcyck, É.; Le Bourdais, C.; Marcil-Gratton, N. & J. Mongeau (1999). ***Canadian Families at the Approach of the Year 2000***, Statistics Canada, catalogue no. 96-321-MPE.

Picot, G. & J. Myles (1996). "Social Transfers and Changes in Family Structure and Low Income among Children", ***Canadian Public Policy***, 22 (3), pp. 244-267.

Picot, G.; Myles, J. & W. Pyper (1998). "Markets, Families and Social Transfers: Trends in Low Income among the Young and Old, 1973-95", Corak, M. (ed.), ***Labour Markets, Social Institutions and the Future of Canada's Children***, Statistics Canada, Ottawa, catalogue no. 89-553.

Ram, B. (1990). ***New Trends in the Family***, Statistics Canada, Ottawa, catalogue no. 91-535.

Rashid, A. (1994). ***Family Income in Canada***, Statistics Canada, Ottawa, catalogue no. 96-318.

Romaniuc, A. (1984). ***Fertility in Canada: From Baby-Boom to Baby-Bust***, Statistics Canada, Ottawa, catalogue no. 91-524.

Ross, D. & R. Shillington (1989). ***The Canadian Fact Book on Poverty, 1989***, Ottawa, Canadian Council on Social Development.

A STEP FURTHER IN FAMILY LIFE: THE EMERGENCE OF THE BLENDED FAMILY

by Heather Juby*, Nicole Marcil-Gratton* and Céline Le Bourdais*
with the collaboration of Paul-Marie Huot*

Introduction

As the Baby Boom drew to a close, the institution of marriage in its most traditional form also started to crumble, marking the beginning of the profound changes in conjugal and family life that characterized the final decades of the twentieth Century. The same breakthrough that permitted reliable family planning, and contributed to the plummeting birth rates of the late 1960s and early 1970s, also made possible the divorce between marriage and sexual activity. New and safer contraceptive methods paved the way for relatively risk-free cohabitation among the young, undermining the institution of marriage as the sole entry into conjugal life. Soaring divorce rates during the same period dealt a further blow, as the legal system adapted to changing ideas on marital commitment by offering an alternative to "till death do us part" as the only socially acceptable way out of an unsatisfactory marriage.

Changes in conjugal behaviour have led to the transformation of family life for both adults and children. Socio-demographic studies of the adults involved tend to look at who chooses cohabitation over marriage, and why some couples are more prone to divorce than others, paying little attention to the emotional or behavioural impact on the adults involved. A great deal of research, however, has focused on the impact that these changes in adult behaviour have on the children whose lives are transformed as a result. As the process unfolded, leading from one uncharted territory to another, social scientists were never far behind. The earliest studies looked at the impact of marital breakdown on children, assuming father-absence to be responsible for any adverse effects. As more and younger children experienced their parents' divorce, the focus shifted towards the more general consequences of living in a lone-parent family, suggesting that many of the negative outcomes previously attributed to father-absence could be explained by the relative poverty into which these families frequently fell when the parents separated (see Seltzer, 1994 and Amato, 1993, for reviews of research on children's adjustment to divorce). Then, as these lone-parents entered new unions, sometimes with partners who also had children from earlier unions, the field of "stepfamily" research developed. It was largely concerned with understanding why

---

* Centre interuniversitaire d'études démographiques, Institut national de la recherche scientifique / Université de Montréal

stepfamilies are less stable than intact families (see Cherlin and Furstenberg, 1994; Coleman, Ganong and Goodwin, 1994). More recently, as the first generations of children growing up in these unstable families reach adulthood, it has been possible to assess the longer-term effects, with research showing that children of separated or divorced parents have an above-average risk of a number of "undesirable" conjugal and parental behaviours, such as teenage pregnancy and early marriage (Amato, 1996; Le Bourdais and Marcil-Gratton, 1998).

As the number of stepfamilies grows, a development that has so far aroused less interest is the emergence of yet another family type, with parents in a stepfamily deciding to have a child together. The birth of a common child transforms the nature of the stepfamily by creating a genetic link between all family members where one did not previously exist. The first studies to take notice of this event did so in the context of research into factors contributing to the stability of stepfamilies rather than as an object of study in its own right. In the present research, our aims are to trace the emergence of the "blended family" (the term generally employed to describe stepfamilies with a common child), exploring which features of stepfamilies make them most susceptible to become blended families, and to assess how being born into a stepfamily affects the family experience and subsequent life course of the growing number of children involved.

Defining Stepfamilies and Blended Families

A stepfamily is created when a lone parent starts living with, or marries, an individual or another lone parent. Men and women can enter stepfamilies as a stepparent or a biological parent (or both), and through a number of different pathways. For some, becoming a stepparent may be their first experience of parental and conjugal life; for many others, the transition to stepfamily life marks the end of a period of lone-parenthood, initiated either by the birth of a child outside a union, or more commonly by the separation of parents in an intact family. This creates great diversity between stepfamilies, and raises the question of how to characterize different stepfamily types. To be classified within the general category of "stepfamily," a family is normally expected to fulfil two conditions: first, that one of the parents in the family is not the biological parent of all the children, and, second, that the parents and children share a residence. Obviously, the second condition is a slippery one when applied to the types of family studied here, where children may have more than one residence, alternating between the households of separated parents. Should a father whose children spend every other weekend with him be classified as a lone-parent? If he remarries, should his new family be classified as a stepfamily? We will not attempt to solve these problems here, but we will try to put very clearly how we have defined the family types included in our analyses.

Residence-based Definition of the Various Types of Two-parent Family[1]

Family Type	Household Composition
Intact family	**Two biological parents + child(ren) from the current union only**
No child(ren) from earlier unions	
Child(ren) from earlier union not living in household	
Stepfamily	**At least one parent is stepparent of at least one child in the household; no child common to the couple**
Stepfather	Mother, her children + stepfather
Single mother	Single mother, her child(ren) + stepfather
Separated or divorced mother	Separated or divorced mother, her child(ren) + stepfather
Stepmother	Father, his child(ren) + stepmother
Stepfather/stepmother	Mother, her child(ren) + father, his child(ren)
Blended family	**At least one parent is stepparent of at least one child in the household + at least one common child**
Blended stepfather	Mother, her children + stepfather + their child(ren)
Blended stepmother	Father, his children + stepmother + their child(ren)
Blended stepfather/stepmother	Mother, her children + father, his children + their child(ren)

[1] As most family types are defined by the presence or absence of stepchildren in the household, which is subject to change, the terms describe the composition of the residential family group at a given moment in time (birth of child, time of survey).

A second important point that needs to be clarified is the lack of uniformity in the terms used to describe the different family types that are currently emerging. Some consensus is being reached, but the terms are still used

inconsistently in recent publications. For example, in the Census Monograph on the Family, the term "blended family" has been substituted for the term "stepfamily" which does not even appear in the document (Péron et al., 1999). In the definitions adopted for the National Longitudinal Survey of Children and Youth, however, "stepfamily" is the generic term referring to "a married or common-law couple residing in the same household, with at least one stepchild living with them who is the biological or adopted child of one parent but not the other parent." A blended family is a "subset of the stepfamily," and "consists of a married or common-law couple living with at least two children, one of whom does not share the same natural and/or adoptive parents as the other child(ren)" (User's Handbook and Microdata Guide, p. 55). Two types of "blended family" are envisaged:

1) A couple with the biological children of the female partner as well as the biological children of the male partner;

2) A couple with the biological children of the male, female or both partners, plus a child from the new union.

While there is some justification for using a "not-full-sibling" criterion for classifying these families, the origin, composition and dynamics of the two types of blended family are so different that it may be necessary to distinguish between them to analyse them with any subtlety. In the first type, the relationship between the children in the family is that of stepsiblings, while in the second it is a half-sibling relationship. Moreover, in the first type, all the children have had similar life experiences, such as having a stepparent in the household, and most have lived in a lone parent family and have another biological parent living elsewhere. In the second type of family, only some of the children have lived these events, and their experience is not shared by their half-siblings born within the stepfamily and living with their two biological parents. Finally, the first kind of blended family is formed when two lone parents marry or start living together, each bringing children from an earlier union with them into the new union; this event marks a transition from a lone-parent family to a stepfamily. The second is a transition that occurs within a stepfamily and creates a genetic link between all members of the family that is absent in the first type.

In fact, in terms of the relationships between the family members, the first type of blended family has more in common with stepmother or stepfather families than with the second type of blended family. The creation of the first type of blended family is also a relatively rare event: only 8% of the stepfamily episodes reported by women in the 1990 GSS, for instance, included children from earlier unions of both members of the couple (see Table 1). In contrast, a common child was born within almost half (48%) of these episodes. In the present analysis, therefore, the focus will be on the emergence of the second, and most common, type of blended family.

The Emergence of the Blended Stepfamily

After a brief presentation of the data, this section reviews how changing conjugal behaviour over the last three decades has created the conditions necessary for the emergence of the blended stepfamily, from both the child's and the mother's perspective. A second section presents an analysis of the factors influencing the decision to have a child within a stepfamily. In the final section, we examine the impact that being born into a blended family has on children's subsequent family life, exploring whether this varies according to the characteristics of the stepfamily into which they are born, and comparing it with the experience of children born into intact families. These different analyses draw principally on data from two separate sources: those analyses that take the child as the unit of study employ data from the National Longitudinal Survey for Children and Youth (NLSCY), while those that are based on adult behaviour draw on data from the 1990 and 1995 General Social Surveys on the family (GSS). In the General Social Surveys, large representative samples of Canadian men and women, aged 15 years and over, were asked retrospectively about all marital or common-law unions, and about all biological, adopted or stepchildren they had raised. This information enabled us to reconstitute the family histories of all respondents.

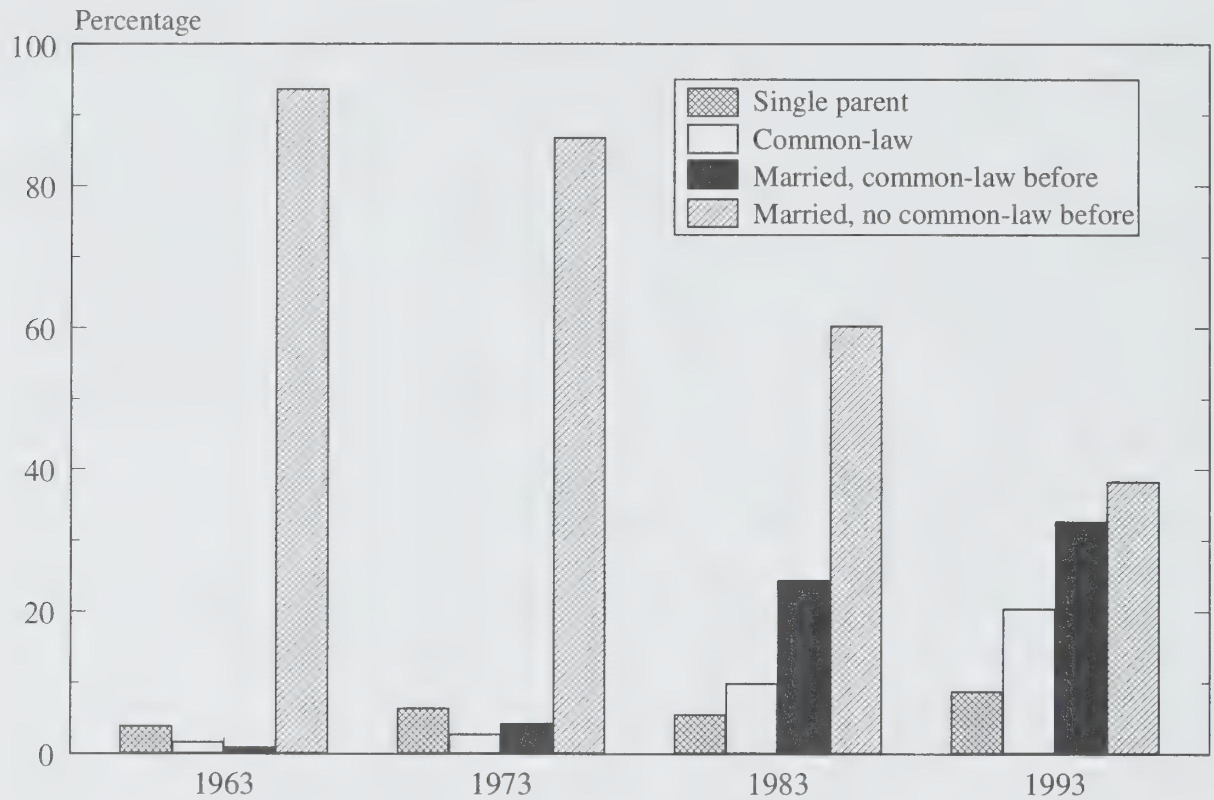
The NLSCY is a panel study, conducted jointly by Statistics Canada and Human Resources and Development Canada (HRDC). Repeated at two-year intervals at least until the year 2002, it provides a unique source of data on the family histories of a large sample of Canadian children, which is representative at the national and provincial level. At the first wave, carried out during the winter of 1994-95, 22,831 children aged 0 to 11 years were included in the survey sample. Questions were put to parents, children and teachers on a variety of topics ranging from child development and school achievement, to family history and dynamics. The main data used here are drawn from the "Family and Custody History" section of the survey, which contains the complete, retrospective conjugal and parental history of the child's biological parents up to the time of survey. Using information on the number and type of earlier conjugal unions, whether children had been born within these unions, and whether these children were present in the household at the target child's birth, we were able to determine the type of family into which each child was born. Data on the subsequent conjugal behaviour of both parents revealed whether or not children experienced their parents' separation, and at what age.

a) The Child's Perspective

- Family Context at Birth and the Rise of Common-law Unions

The decline of traditional marriage as the context for family formation has altered the family environment into which children are born. When common-

Figure 1. Family Context at Birth for Various Cohorts of Children, Canada, 1963-1993

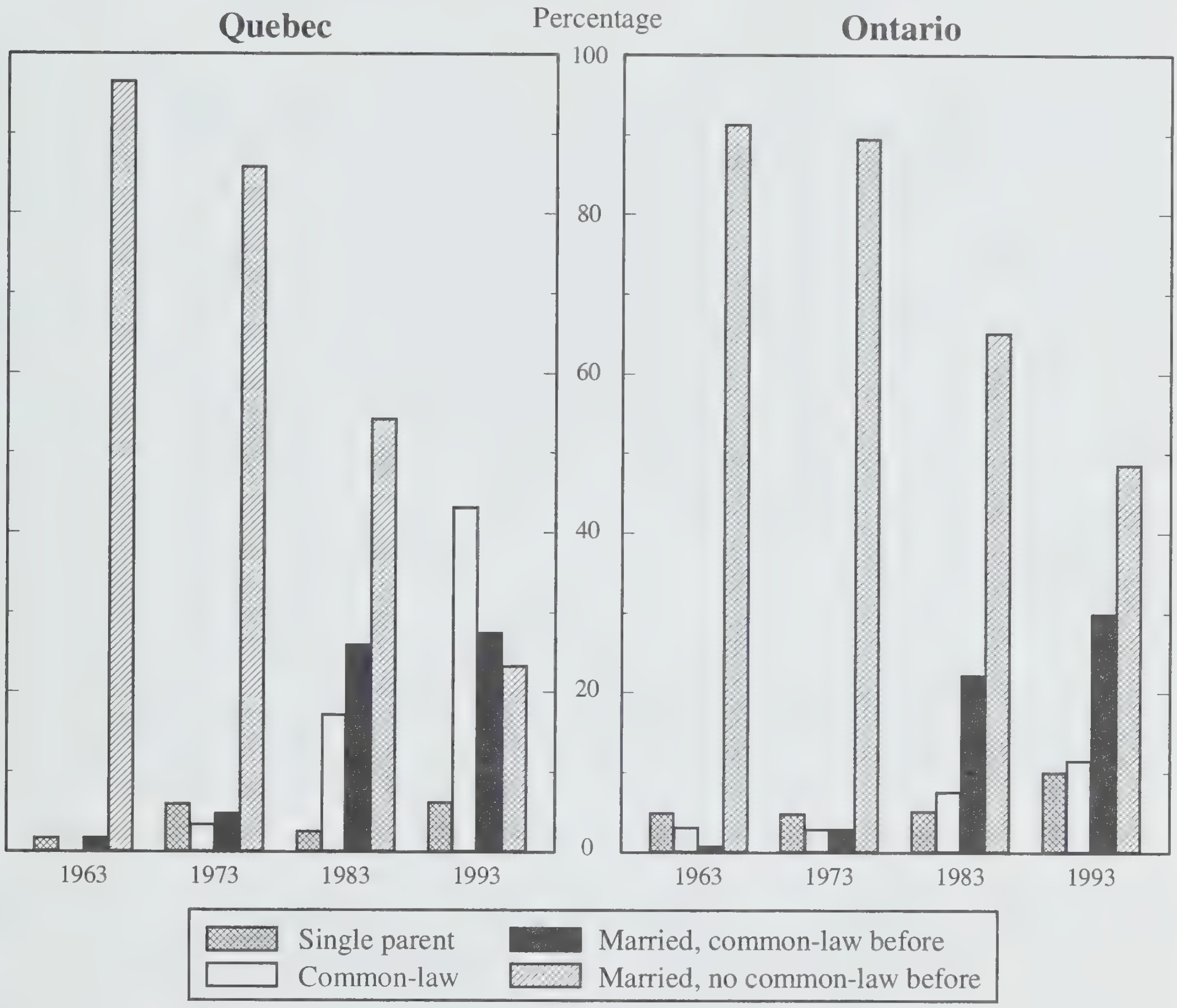


Sources: 1963 cohort: Family History Survey 1984; 1973 cohort: General Social Survey, 1990; 1983 and 1993 cohorts: National Longitudinal Survey of Children and Youth 1994-1995.

law unions first became popular, it was as a prelude to marriage rather than as an alternative to it; as the union became more committed, and particularly once children were planned, couples tended to legalize their union by marrying. However, in more recent years, particularly in Quebec, cohabitation has largely replaced marriage as a context for starting a family, with couples no longer seeing the need to formalize their conjugal union when children arrive. Figure 1, which presents the family context into which children were born at the start of each of the last four decades of the twentieth century, clearly illustrates the emergence of this trend for Canada as a whole.

Apart from a small percentage born to lone mothers, the babies of the early 1960s were born almost exclusively to couples whose life together had started at their wedding. Over the following decades, while the proportion of extra-conjugal births remained relatively stable, the same is not true for births within traditional marriage. Rising slowly during the late 1960s and the 1970s, the proportion of children born to parents who had experienced a common-law union escalated during the 1980s. ***By the early 1990s, only a minority—just over one-third—of Canadian babies were born within***

Figure 2. Family Context at Birth for Various Cohorts of Children, Ontario and Quebec, 1963-1993



Sources: 1963 cohort: Family History Survey 1984; 1973 cohort: General Social Survey, 1990; 1983 and 1993 cohorts: National Longitudinal Survey of Children and Youth 1994-1995.

"traditional" marriages, although the majority were still born "within wedlock," as cohabiting couples legalized their union before starting a family. Overall, among the most recent cohorts, one Canadian birth in five was to an unmarried couple—twice as many as there had been a decade earlier. This rapid increase in children born "out-of-wedlock," however, was due largely to changes in Quebec.

Taken as a whole, Canadian statistics mask important regional differences in the family context into which children are born. Contrasting the evolution of common-law unions in Canada's two most populous provinces—Quebec and Ontario—serves to highlight these strong disparities with respect to the incidence of cohabitation as a context for family life (Figure 2). The move away from marriage as the only permissible framework within which to start a family has been much slower in Ontario than Quebec; by the 1990s, almost

half the children born in Ontario were still born within a traditional marriage. Add to that the 30% of cohabiting couples who legalized their union before starting a family, and almost four out of five Ontario babies in the most recent cohorts were born to married parents. Cohabiting couples were responsible for only one birth in eight, only slightly more than the proportion attributable to lone mothers (10%). This situation is in striking contrasts with developments in Quebec, where the likelihood of being born within a traditional marriage in the early 1960s was even higher than it was in Ontario at that time. Three decades later, the situation had changed radically: less than a quarter of babies were born to married couples who had not lived together before marrying, and half of all babies were born outside marriage. In other words, by the early 1990s, over 40% of births were to cohabiting couples; this trend continued throughout the 1990s, and by the turn of the century more than half the babies born within a union were born to couples who had chosen not to legalize their union. Moreover, the lowest proportions of marital births in Quebec are to be found in the rural, Francophone regions of Quebec; in two of these regions, less than a quarter of babies born in 1998 were born within marriage (Institut de la Statistique du Québec, 2000).

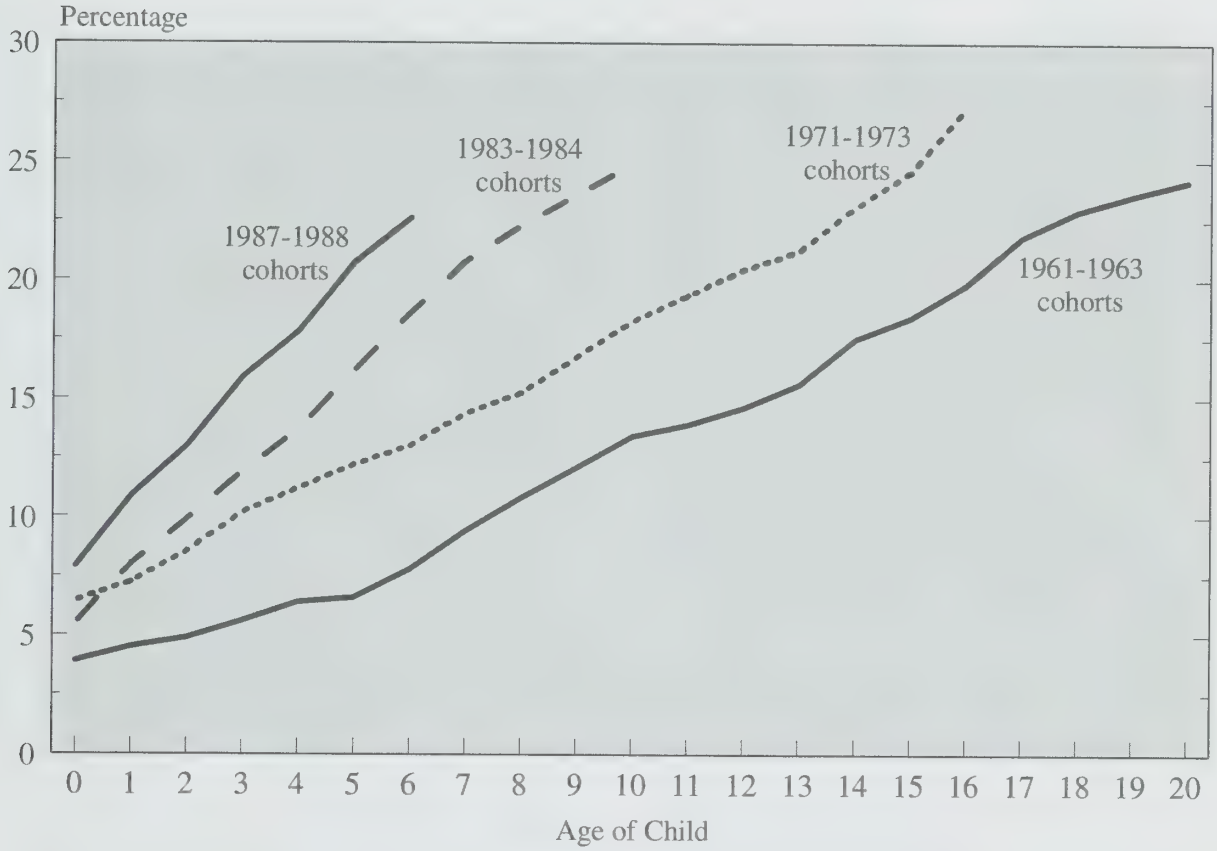
To sum up, while the institution of marriage has lost its monopoly as the only acceptable entry into conjugal life in Ontario, it has retained its monopoly insofar as family life is concerned. The change in Quebec is much more profound, with cohabitation steadily gaining ground as an alternative to marriage for raising a family. As a result, the family context into which children are born has undergone far greater change in Quebec than in Ontario. This fact does not, however, protect Ontario children from the consequences of the second factor affecting conjugal unions—that of their growing instability. Although marriage still appears necessary for starting a family, it is no longer deemed essential for raising children to adulthood, and the presence of children is now far less of a hindrance to marital breakdown than it was in the past.

- Union Instability and Life with a Lone Parent

In the wake of the 1968 Divorce Act in Canada, escalating divorce rates have had a huge impact on the family life of children growing up at the end of the twentieth century. Of course, divorce rates as such provide only a partial image of conjugal instability, given that dissolutions of common-law unions are, by definition, excluded from the statistics on legal separation and divorce. Survey data provide a more complete picture of the extent of union breakdown, and enable us to focus on the separations of interest here: those involving couples with children. Comparing data for the same cohorts of children described in the previous section,[1] Figure 3 shows clearly how the experience

[1] Except the most recent who were still very young at the time of survey–children born five years earlier were used instead.

Figure 3. Cumulative Percentage of Canadian Children Who Were Born to a Lone Parent or Have Lived Through the Separation of their Parents, from Birth to Last Birthday Before Survey, for Various Birth Cohorts, Canada

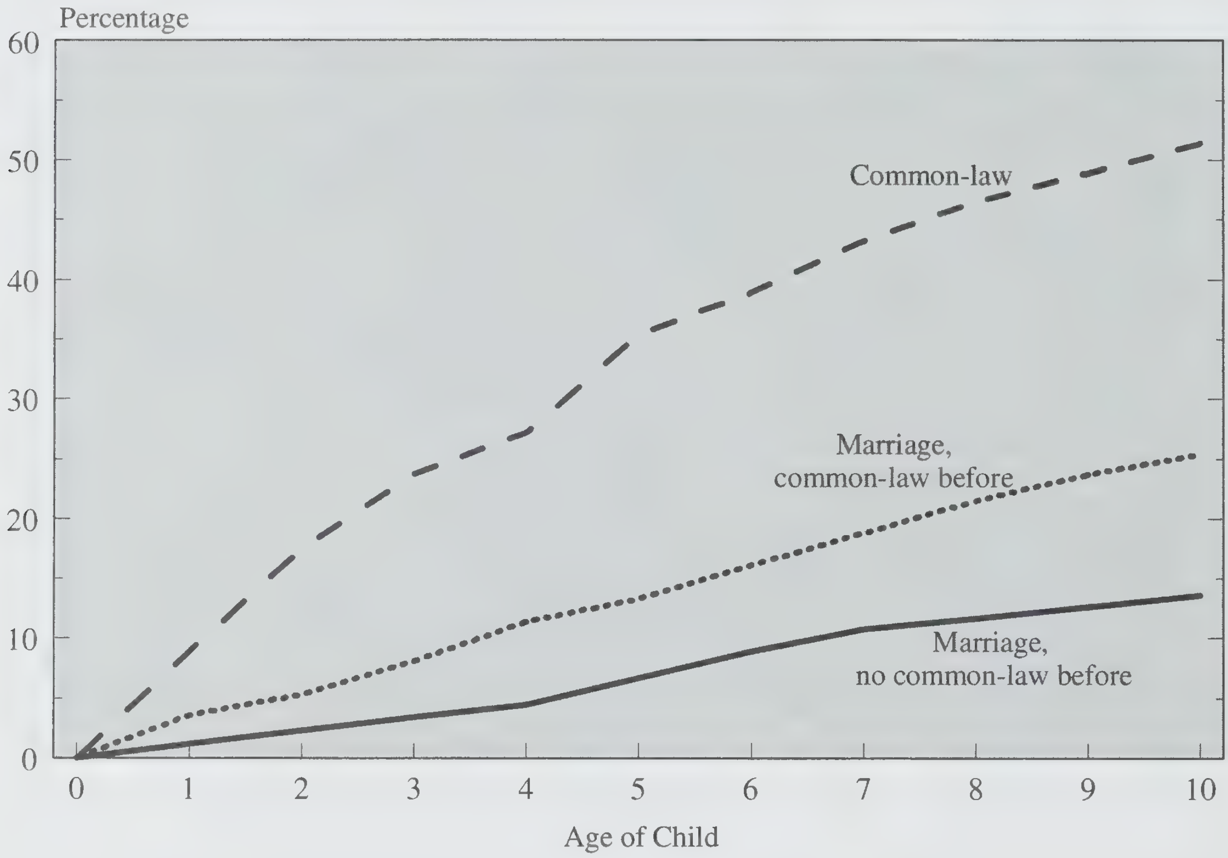


Sources: 1961-1963 cohorts: Family History Survey 1984; 1971-1973 cohorts: General Social Survey, 1990; 1983-1984 and 1987-1988 cohorts: National Longitudinal Survey of Children and Youth 1994-1995.

of life with one parent has evolved since the early 1960s. The starting point of each curve, at age 0, represents the proportion of children whose parents were apart at their birth; all further variations between the cohorts are due to changing rates of union breakdown among parents who were living as a couple at the child's birth.

Among children born in the early 1960s, 20% had lived part of their life with a lone parent by the age of sixteen. Children born a decade later had reached this level by the age of twelve, those born in the early 1980s by the age of seven, and for the most recent cohorts, by the age of five. It is as yet too early to estimate what proportion of children born in the 1990s will experience lone-parent family life during their childhood. However, the rise in separations during the preschool years over the period indicates that these children are unlikely to live more stable family lives than their predecessors. This rise is visible in the increasing steepness of the curves from one generation to the next in Figure 3. The growing proportion of children experiencing parental

Figure 4. Cumulative Percentage of Canadian Children Born in a Two-parent Family, Who Have Experienced their Parents' Separation, According to the Type of Parents' Union, 1983-1984 Cohorts, Canada



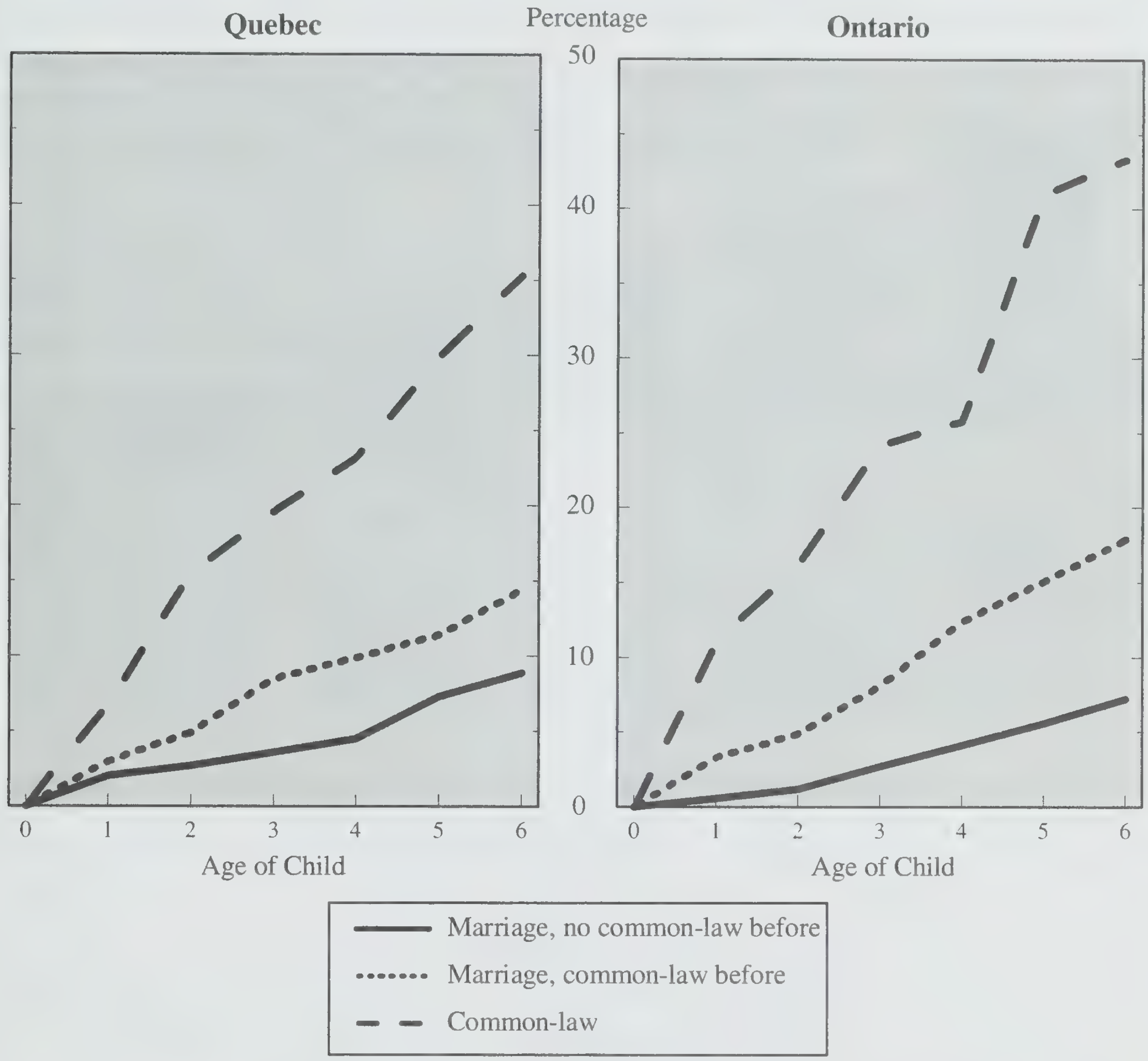
Source: Statistics Canada, National Longitudinal Survey of Children and Youth 1994-1995.

separation can be estimated by taking the percentage at age 0 as the starting point (thus excluding children born outside a union who never lived with both parents). While only around 3% of children in the earliest cohorts saw their parents separate before the age of five (7% - 4% of children born outside a union), the proportion reached 5% for the next cohort, 10% for children born in the early 1980s and over 12% for the most recent cohorts.

- The Greater Instability of Common-law Unions

Reinforcing these trends is the rising proportion of children born within common-law unions who, as Figure 4 clearly indicates, face a higher risk of experiencing their parents' separation than children of married parents. It seems that having a child, a decision that might have been expected to suggest a high level of commitment within a common-law union, is not sufficient to close the gap between the stability of cohabiting and married couples. Overall, one child in five (20.5%), born in 1983-84 within a two-parent family, saw his parents separate by age ten. However, the risk varied enormously according

Figure 5. Cumulative Percentage of Canadian Children Born in a Two-parent Family, Who Have Experienced their Parents' Separation Before Age 6, According to the Type of Parents' Union, 1983-1988 Cohorts, Ontario and Quebec



Source: Statistics Canada, National Longitudinal Survey of Children and Youth 1994-1995.

to the type of conjugal union selected by their parents. ***Children born to married couples who did not live together before marriage were the least likely to witness the breakdown of their parents' union (13.6%). For those born to married parents who had lived together before marrying the risk was almost twice as high (25.4%). The risk doubled again for children whose parents were unmarried at their birth: over half of these children lived through their parents' separation before their tenth birthday***.

With common-law unions largely replacing marriage as the context for raising a family in Quebec, one might expect to find greater stability for this type of family in Quebec than in other regions of Canada. However, risks of

parental separation, calculated up to the sixth birthday for children aged 6-11 years at the NLSCY (Cycle 1, 1994-95) for Quebec and Ontario, show that cohabiting-couple families in both provinces remain much more unstable than other families (Figure 5). Nonetheless, there is some evidence that, in Quebec, the gap in stability between the different types of union is narrowing. In particular, the destabilizing impact of premarital cohabitation among married-couple families is smaller in Quebec than Ontario: direct marriage in Quebec appears slightly less stable, and cohabitation rather more so than in Ontario.

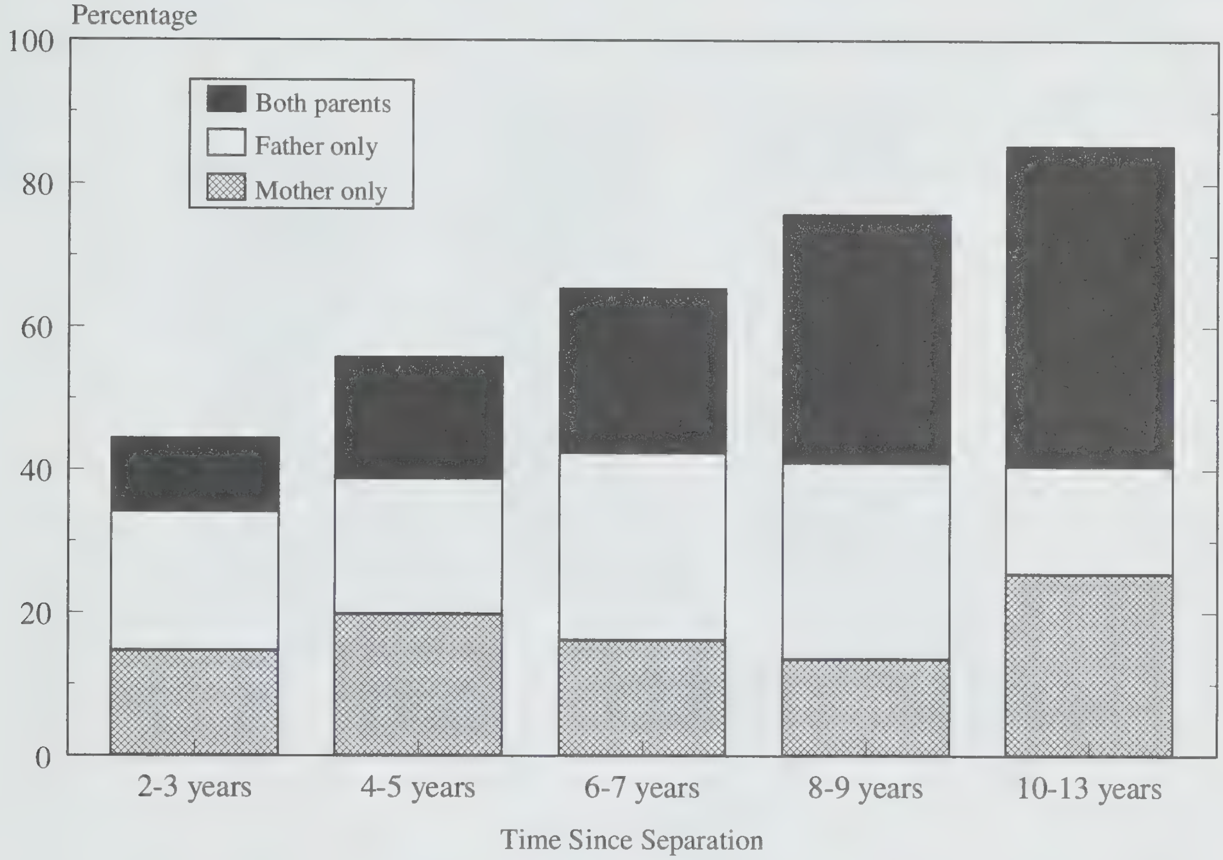
To sum up, the two most striking consequences for children's family experience of growing union instability are, first, that ***more and more of them experience life with a lone parent and, second, that this occurs at an increasingly early age***. These developments have important repercussions going beyond the fact that more and more families will be struggling with the many adjustments triggered off by parents separating. For these children, entering a period of life with a lone parent may be only the first of a series of family transitions. With their parents once more "available," they may see their mother, father, or both parents enter another conjugal union with a new partner.

- New Unions and Life with a Stepparent

Indeed, many children whose parents separated during the 1980s and 1990s had to adjust to the presence of stepparents as one, or both, of their parents entered a new union. This is clearly shown in Figure 6, which presents the proportion of children whose parents were not together at the NLSCY first wave (1994-95) according to both the time elapsed since the separation and the subsequent conjugal histories of their parents—that is, whether their mother, father or both parents had entered a new union at some point between separation and the second wave (1996-97) of the survey.

Already, ***only two to three years after the separation, one or both parents of almost half the children had entered a new union***: a quarter of mothers (14.6% + 10.3%) and almost one-third of fathers (19.5% + 10.3%). Over time, more parents entered new relationships and, 10-13 years after the separation, 85% of children had experienced the arrival of at least one new "parent" in their family environment; for more than half of these children (44.8% / 85.0%) there was both a new mother and a new father. In other words, many children who spend a period of time with a lone-parent, subsequently find themselves in a stepfamily; at this point the next transition could well be into a blended family, as parents decide to cement their new union by having a child together. For this course of events to culminate in the birth of a child within a stepfamily, it must occur early enough in a woman's life for her still to be of reproductive age. This condition for the emergence of the blended family can best be evaluated through data on the family life course of women.

Figure 6. Distribution of Children Whose Parents Were Separated in 1994-95, by the Time Elapsed Since Separation and New Conjugal Unions of Mother, Father or Both Parents, Canada

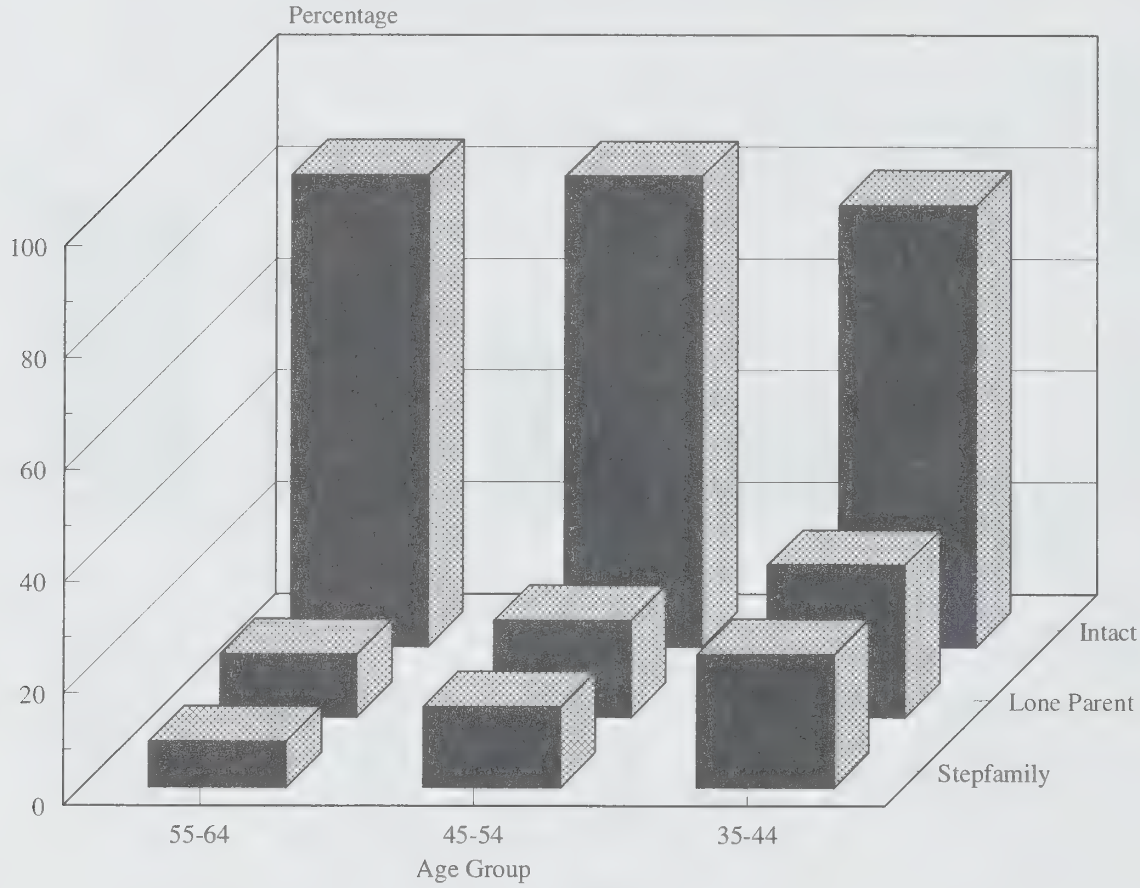


Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycles 1 and 2.

b) The Mother's Perspective

With research showing that the younger a mother is at separation, the more likely she is to enter a new union (Ermisch and Wright, 1991; Le Bourdais et al., 1995), the fact that separation is occurring earlier reinforces the probability that lone parents will form a new union and create a stepfamily. A study of women's family life course illustrates these trends (Juby and Le Bourdais, 1996). Using 1990 GSS data, the probabilities of experiencing a number of different family pathways were estimated for three generations of Canadian women (aged 55-64, 45-54 and 35-44 in 1990). The analysis was limited to transitions occurring before the age of forty, an important factor in the present study, as women entering stepfamily life after this age are unlikely to make the transition to a blended family by having an additional child. These three groups are roughly equivalent to the generations of mothers of the child cohorts (1961-63, 1971-73 and 1983-84) analysed in Figures 1 to 3, and parallels can be drawn between the experiences of children and mothers. Take the type of parents' union at birth illustrated in Figure 1, for example. In the early 1960s, children were born almost exclusively within a traditional marriage,

Figure 7. Family Trajectory, by Age 40, of Women Entering Motherhood in an Intact Family, by Age Group, 1990, Canada



Source: Statistics Canada, General Social Survey, 1990.

unlike those born twenty years later; correspondingly, the oldest generations of women (55-64 years) would generally have had their children within a traditional marriage, while the youngest would be more likely to have cohabited with their child's father.

To illustrate the effect of growing conjugal instability on the family life course, Figure 7 presents the first three most common family transitions made by three generations of Canadian women. Most women become mothers for the first time within an intact family at the birth of their first child[2]. The tallest columns in Figure 7, therefore, indicate the proportions of women entering motherhood when they have their first child within an intact family[3]. The figures are high for all generations: at almost 85% for women in the two oldest groups, and 79% for women aged 35-44 years at the survey. The middle columns show the proportion of women experiencing the second most common family transition—from an intact to a lone-mother family at the breakdown of their marriage or common-law union. Despite the fact that fewer women

[2] Less than 10% of women start family life as a single mother or as a stepmother.

[3] Estimates calculated from a series of multiple-decrement life tables.

in the younger generations became mothers in an intact family, a higher proportion experienced the breakdown of an intact family: over a quarter of the youngest women, compared with just over one-tenth of the oldest. The shortest columns represent the third most common transition—to life in a stepfamily, as these lone-mothers enter a union with a new partner. Although the majority of lone mothers in each generation made this transition, the probability increased over time. Among the oldest generations of women, almost three-quarters (8.3 / 11.3 = 73.5%) of separated or divorced mothers entered a new union; among the youngest, this proportion rose to nearly 90% (23.9 / 27.3 = 87.6%). Overall, the proportion of women aged 35-44 years following the family life course "intact family - lone mother - stepfamily" was three times higher than among women aged 55-64 years.

The breakdown of an intact family is not the only entry into lone motherhood—around 5% of women have their first child outside a union altogether. Almost all these women, who tend to be young at their child's birth, provide their child with a stepfather at some point. In addition, a small percentage of women start family life by becoming a stepmother to their partner's children. Overall, therefore, among women starting families during the 1980s, approximately one-third spent some time as a lone mother, and around 30% entered stepfamily life before the age of forty—twice the proportion among women starting family life twenty years earlier (see Juby and Le Bourdais, 1996, Table 2). Although it is too early to analyse the family life course of parents of the 1990s, the data available for the early years indicate that these trends are likely to continue. The rapid rise in the number of women living in a stepfamily during childbearing years is largely responsible for the emergence of the blended family, as parents in stepfamilies decide to have a child together. However, not all couples choose to expand their family, and in the following section, we will attempt to identify which characteristics of stepfamilies and their members promote or impede this transition.

From Stepfamily to Blended Family

Stepfamilies can be characterized in a number of different ways, but the most common way is to classify them according to the origin of the children, or, conversely, by the sex of the stepparent. Thus, in a stepmother family, only the biological children of the father are present, whereas in a stepfather family, only the mother's children are present. As mentioned earlier, a family in which both parents are stepparents of the other parent's biological children is classified as "blended" according to NLSCY definitions. Here, this type of family will be referred to as a stepmother/stepfather family; the term "blended" family will be restricted to stepfamilies, formed when the stepfamily couple have a child together, in which some children are half-siblings of others. Only by making this distinction is it possible to analyse the factors influencing the decision made by stepfamily parents to have a child together.

Not all stepfamilies become blended families, but little is known about the conditions conducive to this transition. Having a child within a stepfamily has generally been explored within studies of stepfamily stability, rather than being examined as a transition in its own right. Research has shown that having a child within a stepfamily is linked to union stability (Desrosiers et al., 1995; Wineberg, 1992), although the direction of the relationship has not been established. Do couples have a child together because their union is a stable one, or does the arrival of a baby create a bond uniting the previously disparate family group? Both factors may well have a role to play, in that the birth of a child may cement an already relatively committed relationship.

Survey data are essential to explore how stepfamilies evolve. Collecting reliable data on this question, however, is fraught with difficulties arising in particular from children moving between their parents' households. In the 1990 GSS, for example, respondents were asked for details concerning all the children they had raised. Fewer women reported raising stepchildren that might have been expected from information provided by male respondents. This deficit may partly be explained by problems with interpreting the question of "raising" children: a woman whose partner's children lived mainly with their mother might not consider that she had "raised" these children, and would not have reported them in the survey. Nonetheless, information collected from women interviewed at the GSS on the subject is more reliable than that supplied by male respondents, for two reasons. The first relates to the incomplete coverage of fathers not living in intact families (for a discussion of this problem, see Juby and Le Bourdais, 1998); the second stems from to the lack of data on the living arrangements of parents and children, which makes it difficult to identify family "episodes" according to a residence-based definition of the family. Given that children usually live with their mother most or all of the time after their parents separate, we can more reliably assume that children were actually present in the household during the family episodes reconstructed from mothers' reports than from fathers'. The following analysis of stepfamily transformation is based, therefore, uniquely on data collected from female respondents of the 1990 GSS; as a result, it is important to remember that the distribution according to stepfamily type may underestimate the proportion of "stepmother" families.

Determinants of the Transition from Step to Blended Family

A proportional hazards model was used to analyse the transition from step to blended family (see Allison, 1984). The analysis is based on first stepfamily episodes experienced by female respondents aged 18 to 65 years in the 1990 General Social Survey.[4] Episodes starting after the age of forty are excluded,

[4] This analysis is based on previous research, leading to the construction of the series of family episodes from information on unions and children collected in the 1990 GSS. This process, which is essential in order to identify stepfamily episodes and situate them in the life course, has not been carried out for the 1995 GSS.

given that the birth of a child within the stepfamily is the object of study. The dependent variable is the instantaneous rate of birth, estimated from the moment the stepfamily couple started their conjugal life together. The independent variables are principally socio-demographic characteristics of the 481 stepfamilies included in the sample. Socio-economic characteristics could not be included because the information, such as income data, referred to the situation at the time of survey rather than during the stepfamily episode. For the same reason, an important demographic characteristic also had to be omitted from this analysis: whether or not both partners were still fertile at the start of their union.[5] This factor is obviously crucial to the decision to have a child, and is likely to affect the different stepfamily types in different ways. Childless women entering stepfather families, for example, are less likely to have undergone voluntary sterilization than are separated or divorced women, who may have had their desired number of children before the breakdown of their first family.

In Table 1, distributions of the characteristics introduced into the model are presented for the sample as a whole, and for the different stepfamily types: stepfather, stepmother and stepfather / stepmother families. Stepfather families were further subdivided, according to the two principal family pathways leading up to their formation: the first category includes women whose children were born within an intact family, while the second comprises those who were alone at their child's birth, and for whom the stepfamily is their first experience of a two-parent family. Stepfather families, by far the most common type of stepfamily reported by female respondents, representing over three-quarters (76%) of the families in the sample, were divided almost equally between the two types. Stepmother and stepfather/stepmother families made up one-sixth (16%) and one-twelfth (8%) of the sample respectively. ***Almost half (48%) the stepfamilies became blended families with the birth of a child within the family***, although this proportion varied considerably according to the family type. In stepfather families, two-thirds of single mothers had a child with their new partner compared with just over one-third of separated or divorced mothers (35%). Stepfamilies in which both parents had children from a previous union were at a similar level (34%), while half the women entering stepfamily life as a stepmother, without children of their own, had a child within the union.

Several demographic variables, measured at the start of the episode, seemed likely to influence the decision to have a child: the mother's age, the number of children already present, the age of the youngest of these children, and the sex of the children. These variables show clearly the contrast in the two stepfather family types. Single mothers were generally younger than separated or divorced women when they formed a stepfamily, and they had fewer and younger children. Almost four-fifths of single mothers were under 25 years

---

[5] Although the respondents are asked whether they or their partner had had an operation to prevent pregnancy, there is no information on the timing of the event.

Table 1. Stepfamily Characteristics for First Stepfamily Episodes Declared by Female Respondents at the 1990 General Social Survey, According to the Type of Stepfamily, Canada

Characteristic	Stepfather		Stepmother	Stepfather/ Stepmother	Total
	After separation	Single mother			
Total number of stepfamilies	193	171	79	38	481
Percentage distribution of stepfamilies	40	36	16	8 *	100
Percentage of stepfamilies with a born or adopted child	35	66	50	34	48
	Percentage Distribution of:				
Mother's Age at Start of Episode					
Under 25 years	20 *	78	46	**	46
25-29 years	26	16 *	28 *	**	22
30-39 years	54	**	26 *	40 *	32
Total	100	100	100	100	100
Sex of Child(ren) Present at Start of Episode					
Boys only	34	54	46	**	41
Girls only	32	41	**	**	32
Boys and girls	34	**	30 *	80	27
Total	100	100	100	100	100
Period of Entry into Stepfamily					
Before 1970	14 *	32	32 *	**	23
1970-1979	28	35	**	48 *	31
1980-1990	58	33	49	40 *	46
Total	100	100	100	100	100
Type of Union at Start of Episode					
Marriage	22 *	68	38 *	**	41
Cohabitation	78	32	62	76	59
Total	100	100	100	100	100
Average age of mother	30.4	22.6	25.7	27.9	26.7
Average number of children at start of episode	1.8	1.1	1.7	3.4	1.7
Average age of youngest child at start of episode	6.6	2.7	6.2	4.3	5

* Estimate has a high variability and should be interpreted with caution.
** Estimate has a too high variability to be published.
Note: Percentages were obtained using weighted data.
Source: Statistics Canada, General Social Survey, 1990.

of age at the start of the episode compared with only one-fifth of separated or divorced mothers; for the two groups, the average age was 22.6 and 30.4 years respectively, and the average age of their youngest child, 2.7 and 6.6 years respectively. The other two stepfamily types fell between these extremes. In terms of the number of children already present in the family, stepfather / stepmother families, where both members of the couple had children at the start of the union, had the highest average number of children (3.4). This is double the figure for stepmother families and stepfather families created round a separated or divorced mother, and triple that for stepfather families formed by single mothers who rarely had more than one child at the start of their

new union. Another factor that may or may not be linked to the decision to have an additional child is the desire to have children of a particular sex, or to have “one of each.” Four-fifths of the stepfather / stepmother families included both boys and girls, a much higher proportion than that found in other stepfamily types.

The period of family formation is important because of the changes in marital behaviour affecting the different generations of women in the sample. The increase in separation and divorce following the Divorce Act of 1968 is evident in the distribution of stepfamily episodes from one period to another (rising from 23% before 1970 to 46% after 1980), and in their evolution by type. Only stepfather families created by single mothers are uniformly distributed over the three periods, reflecting the stability over time in the proportion of women having their first child outside a union. The impact of family disruption is particularly clear in the distribution of stepfather families created by separated or divorced mothers. However, the increase in stepmother / stepfather families in recent years reflects not only increasing marital instability. The fact that more women become stepmothers is also a corollary of the growing proportion of separated fathers keeping contact with their children. High proportions of stepmother families in the earliest period, on the other hand, are largely the result of remarriage by widowers.

The period of stepfamily formation is also important because changes in fertility behaviour throughout Canada during the period are likely to play a part in a stepfamily couple’s decision to have a child together. Despite a sharp drop during the 1960s, the total fertility rate remained above replacement level until the early 1970s; it continued to fall throughout the 1970s and more or less settled at around 1.6-1.7 children per woman by the 1980s. Although different factors may be at play in the family-planning process within step and intact families, we would nonetheless expect that declining fertility levels would also be reflected in stepfamily fertility, and that stepfamilies formed in the earlier period would be more fertile than those formed later.

With research showing that marital unions are more fertile than common-law unions, we would expect children to be born more frequently to married stepfamily couples than to those who were cohabiting. However, as discussed earlier, cohabitation is more common among stepfamily couples and may not follow the same patterns of behaviour. In our sample, more than half the couples (59%) were unmarried at the start of the stepfamily episode, although there was great diversity in the type of union chosen by the different types of stepfamily. Stepfather families created by single mothers were the most likely (68%) to begin at marriage—three times more likely than those created around separated mothers. This may be because, as a first union, these couples were more willing to give marriage a try than were other stepfamily couples. On the other hand, the low levels of marriage among couples in other stepfamily types may be a product of the divorce process itself: many unions were formed by

Table 2. Effect of Socio-Demographic Characteristics on the Risk of Having a Child Among Women Living in a Stepfamily (Proportional Hazards Estimates), 1990[1]

Variable / Category	Model		
	1	2	3
Stepfamily Type			
Stepfather - after separation	1.00	1.00	1.00
Stepfather - single mother	2.40 ***	1.03	0.69
Stepmother	1.71 **	1.10	0.99
Stepfather / stepmother	0.87	0.72	0.77
At Start of Stepfamily			
Mother's age	...	0.94 ***	0.93 ***
Age of youngest child	...	0.90 ***	0.92 **
Number of children	...	0.95	0.95
Sex of children			
Boys only	...	1.09	1.07
Other	...	1.00	1.00
Region of Residence / Type of Union[2]			
Rest of Canada / married	...	...	1.00
Rest of Canada / cohabitation	...	...	0.41 ***
Quebec / married	...	...	0.88
Quebec / cohabitation	...	...	0.19 ***
Period in Stepfamily[2]			
Before 1970	...	...	1.00
1970-80	...	...	0.82
1980+	...	...	0.70 *

[1] The levels of significance of the coefficient (exp ß): ***: p<.001; **: p<.01; *: p<.05.
[2] A variable whose value may change over time.
Source: Statistics Canada, General Social Survey, 1990.

previously married individuals who might not have been free to remarry at the start of the episode. This may explain why many couples who were cohabiting at the start of the episode married at some point before the survey. These marital status changes were integrated into the model in the form of a time-varying variable. Moreover, given the distinctive nature of union status in Quebec, the type of union was introduced in interaction with the region of Canada.

- Event History Analysis of the Transition from Step to Blended Family

The parameter estimates for three models are presented in Table 2. A coefficient greater than 1 indicates that the characteristic increases the probability of a transition from step to blended family through the birth of a child and, conversely, a coefficient smaller than 1 indicates that the characteristic decreases it. Variables such as stepfamily type were introduced as dummy variables, and coefficients are interpreted in relation to the reference category (given

in parentheses). For continuous variables, such as mother's age, the number of children and the age of youngest child, the coefficients represent the change in the probability of having a child for each unit increase in the metric variable. All but two variables measure fixed characteristics, with values that remain constant throughout the period. Union status, and the period during which the episode occurred, were introduced as time-varying variables whose values might change over time. A stepfamily episode lasting from 1965-1975, for example, would be categorised as "before 1970" for the first five years of duration, and as "1970-1980" for subsequent durations.

The first model estimates the association between stepfamily type and the transition to a blended family, with stepfather families formed by separated or divorced women as the reference category. The results show that, along with stepfather / stepmother families, this stepfamily type is the least likely to become a blended family. In the two other family types, the conditional probability is significantly higher, with stepmother families 1.7 times more likely to have a child, and stepfather families created by single mothers 2.4 times more likely to.

This diversity totally disappears in the second model, with the introduction of four characteristics at the start of the stepfamily episode: the mother's age, the age of the youngest child, and the number and sex of the children present. Of these, the ages of the mother and of the youngest child at the start of the stepfamily are closely linked to the likelihood of having an additional child. The coefficients show that ***the chance of having a child decreases as the age of both mothers and their youngest child increases***. In other words, ***the younger the mother and the youngest child, the more likely is the transition from step to blended family. These two characteristics explain the stronger risk of transition among stepfather families formed by single mothers estimated in model 1; these mothers and their children were much younger than separated and divorced mothers and their children on entry into stepfamily life*** (Table 1). That a woman's age is important is to be expected given that involuntary and voluntary sterility increase with age for both women and men. It is also unsurprising that couples with younger children are more likely to have an additional child—when young children are already present, having a baby involves less of a change of lifestyle than when children are older, and at the same time it provides a sibling close in age to the other children in the stepfamily. What is more surprising, however, is that ***one of the principal fertility determinants in intact families, namely the number of children already present, has no significant effect on the decision to have another child in a stepfamily***. If the desire to have children of a particular sex has an influence, there is no sign of any consistent pattern. However, the lack of significant results may mean that preferences are spread equally between wanting boys, girls and children of both sexes. The effect of these last two variables remained statistically insignificant even after testing for the possible patterns of collinearity

with stepfamily type, given that stepmother/stepfather families have twice as many children as other families and are also less likely to fall into the "boys only" category.[6]

The absence of any significant difference between stepfamily types remains when we take into account the type of union formed by the stepfamily couple and their region of residence, and the period during which the events occurred (see model 3). This does not mean, however, that these time-varying variables have no impact on the transition from step to blended family. Firstly, cohabitation reduces considerably the likelihood of having a child, and has an even greater negative impact on stepfamily fertility in Quebec than in the rest of Canada (though the difference between regions is not statistically significant). Given that cohabitation is closer to marriage in Quebec, one might have expected the opposite to be true. However, it is important to remember that the growing fertility of common-law unions is a recent development, particularly in evidence in the 1990s, after the 1990 GSS data was collected. There are, however, no significant regional differences in fertility among married stepfamily couples. Secondly, as expected, the probability of having a child declined over time, with stepfamilies in the 1980s significantly less likely than those in the 1960s to become blended families.

Overall, this analysis indicates that stepfamily fertility is to a great extent determined by the same factors that influence fertility in general—mother's age, the size of the birth interval (which corresponds here to the age of the youngest child), the period during which the family was formed, the type of union at birth, and the region of residence. However, this is certainly not the whole story. The fact that the number of children present at the start of the stepfamily has no significant effect on the likelihood of having a child suggests that fertility decisions within stepfamilies are subject to certain influences not at play in intact families. This is only to be expected given the very different circumstances in these two types of family. In most stepfamilies, only one parent has biological children—an experience that the other parent might wish to have. In addition, stepfamily couples are likely to share the same desire to "have a child together" as intact families couples, irrespective of how many children one or other has brought into the family from an earlier union (Vikat et al., 1999).

The Life Course of Children in Blended Families

By the end of the twentieth century, one Canadian child out of five was born into a family environment that did not conform to the nuclear family model: 7.5% were born to a lone mother, and the other 12.5%, born into two-parent families, had half-siblings in their family environment at their birth. Given the dearth of data on the subject, comparing the experience of the oldest

---

[6] Removing these variables from the equation had no significant effect either on the coefficients of the other variables included in the model.

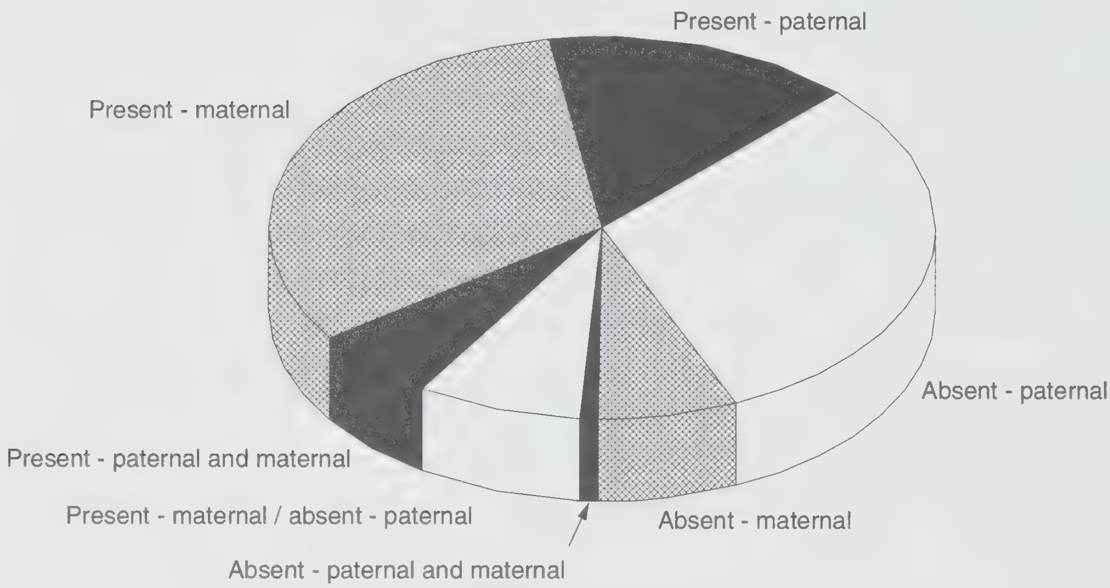
(1983-84) and youngest (1993-94) of NLSCY cohorts on which these figures are based is perhaps the only way of indicating that the family context into which children are born is growing increasingly diverse: 14.5% of the latter cohort compared with 11.4% of the former had half-siblings in their family environment at birth—an increase of over 25% over a ten-year period.

In this analysis, half-siblings are considered "present" in the household if at least one of them lived in the household at least part of the time. These families are consistent with the residence-based definition of the "blended family". For a sizeable minority (39%) of these children, however, none of their half-siblings were present in the household at birth, raising the question of how to classify them. The problem of using residence to define stepfamilies was raised earlier—children with separated parents may live in two households and living arrangements may change over time. At their birth, for instance, children born into stepfamilies may have all or some of their half-siblings present in the household all or some of the time; at a later date, the family configuration may alter as half-siblings change living arrangements and spend either more or less time in the household. These moving boundaries make it virtually impossible to have a clear and constant definition of stepfamilies and, therefore, of blended families, leaving us unclear how to treat children whose half-siblings are not in the household at their birth. From a purely residential perspective, these children are born into intact families. Are we justified, however, in assuming that the family experience of children with half-siblings living elsewhere is similar to that of children born to parents who have no children from earlier unions? Although the half-siblings are not physically present, economic and other resources may be diverted towards them. To circumvent this problem in the present analysis, these children have been assigned a separate category that sets them apart both from children born into intact families, and from those born into stepfamilies.

- The Family Context at Birth

Figure 8 indicates the diversity of family configurations at birth for the growing proportion of children with half-siblings in their family network when the presence of their half-siblings and their origin (that is, whether they are the children of the mother, father or both parents) are taken into account. Having maternal half-siblings living in the household (32%), or paternal half-siblings living elsewhere (31%) were the most common situations, reflecting the greater propensity for children to remain with their mother after their parents separate. To have paternal half-siblings in the household was more unusual (15%), but this situation occurred, nonetheless, twice as frequently as having maternal half-siblings living elsewhere (7%). The remaining 15% of children had both maternal and paternal half-siblings: most often, only the mother's children were present in the household (8%); in 6% of cases, the

Figure 8. Residential Status and Origin of Half-Siblings (Maternal or Paternal) in Children's Family Environment at Birth, Canada



Source: Statistics Canada, National Longitudinal Survey of Children and Youth.

children of both parents were present and, for a few (1%), the children of both parents lived elsewhere. In several of the following analyses, these children have been grouped into three broad categories:

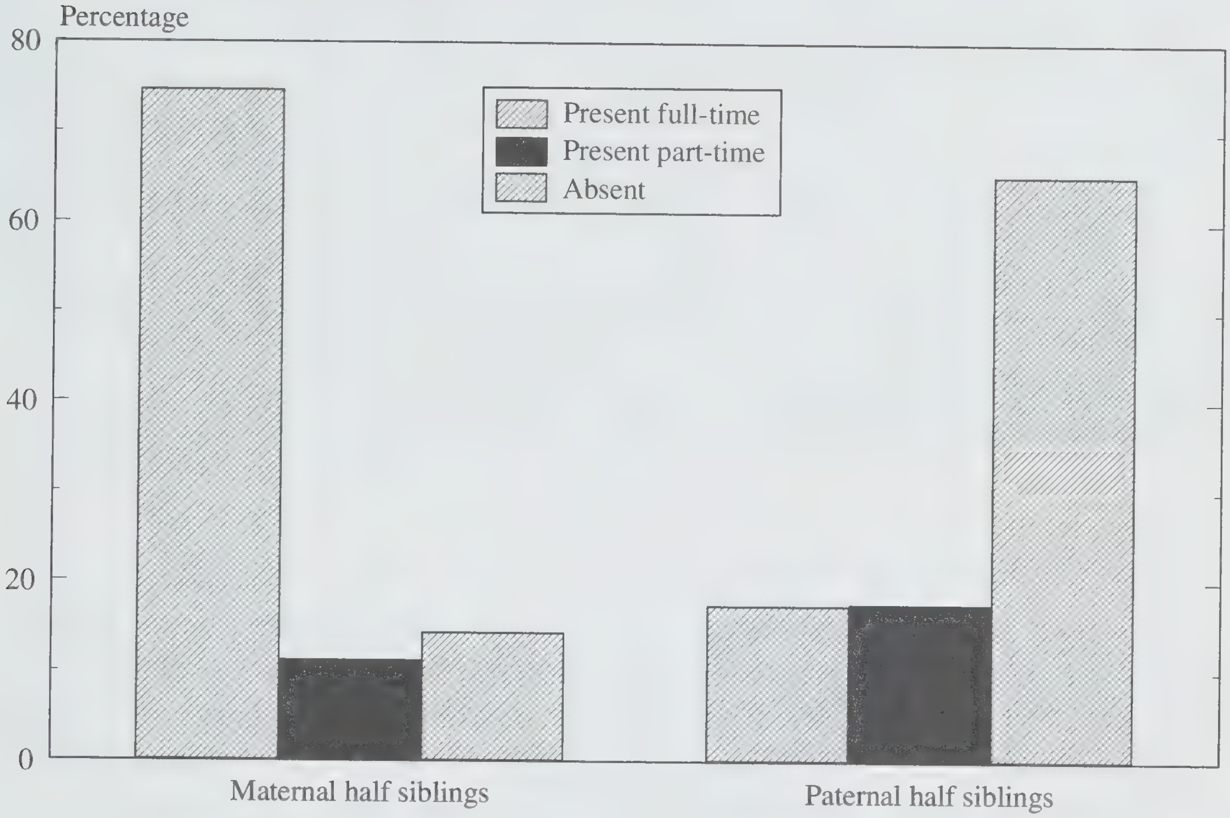
a) All half-siblings living elsewhere (31% + 7% + 1%= 39%);

b) Maternal half-siblings only in the household (though the father may have children living elsewhere) (32% + 8% = 40%);

c) Half-siblings from father or both parents in the household (15% + 6% = 21%).

From these figures, it is clear that children are more likely to have close contact with maternal half-siblings than with their father's children from an earlier union. This is even more evident in Figure 9, which presents the proportions of children with maternal and paternal half-siblings according to their presence in the household at the child's birth. ***Almost three-quarters of these children had all their maternal half-siblings present full-time in the household, and for only one in seven were they all living elsewhere. This contrasts strongly with the situation regarding their father's children from an earlier union: for almost two-thirds, all of their paternal half-siblings lived elsewhere full-time; the rest were divided equally between those with paternal half-siblings present full- or part-time.***

Figure 9. Maternal and Paternal Half-Siblings, According to the Time Spent in the Household at the Target Child's Birth, 1994-1995, Canada



Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1, 1994-1995.

There are important differences between these children and those born in intact families. Never being the oldest child, for example, they are not raised by two first-time parents, as is the case for almost half the children now born in intact families. At least one of their parents will have had some experience of child rearing, although the level will vary according to the time spent with the child before and after separation from the other parent. They will also never be only children, although they may be brought up as such if half-siblings live elsewhere. Table 3 presents the distribution of children with half-siblings in their family environment at birth, although not necessarily present in the household, according to the number of half-siblings. Over half (54.5%) had only one; just over a quarter (26.8%) had two, and almost one-fifth (18.8%) had three or more half-siblings. Of course, children had the greatest number when both parents had children from an earlier union—the case for over half of those with three or more half-siblings. They had the fewest when half-siblings came only from their mother's side: only a quarter had more than one half-sibling, owing primarily to the high proportion of single mothers with only one child in this category.

Table 3. Number and Provenance of Half-Siblings in the Family Environment at Birth[1]

Provenance of Half-siblings	Number of Half-siblings			
	1	2	3+	Total
Mother only	29.2	7.7	2.3 *	39.2
Father only	25.2	13.6	6.7	45.5
Both parents	-	5.5	9.8	15.3
Total	54.5	26.8	18.8	100.0

* Estimate has a high variability and should be interpreted with caution.
[1] Whether they are present in the household or live elsewhere.
Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1.

- *Type of Conjugal Union*

Another way in which these children differ from children born in intact families is that their parents are less likely to be married. Table 4 shows the distribution of children by family environment at birth and the type of conjugal union of their parents. Compared with children born into intact families in Canada as a whole, those born into residential stepfamilies are almost four times as likely to be born to unmarried parents. Those with half-siblings living

Table 4. Distribution of Children Born in Two-parent Families, by Type of Family, Type of Parental Union at Birth, and Region of Canada, 1994-95

Region / Type of Parental Union at Birth	Intact Family		Stepfamily		Total
	No children from Previous Unions	Half-Sibs Not in Household	Stepfather Family	Stepmother/ Stepmother-Stepfather	
Canada					
Direct marriage	56.4	22.0	16.4	19.5	51.3
Marriage, preceded by cohabitation	30.9	43.1	39.4	35.1	32.1
Cohabitation	12.8	34.9	44.2	45.4	16.6
Total	100.0	100.0	100.0	100.0	100.0
Quebec					
Direct marriage	41.2	**	**	**	37.5
Marriage, preceded by cohabitation	30.4	**	**	36.1 *	30.0
Cohabitation	28.3	54.6	76.5	60.8	32.5
Total	100.0	100.0	100.0	100.0	100.0
Canada, Without Quebec					
Direct marriage	61.4	22.2	20.1	25.6	55.8
Marriage, preceded by cohabitation	31.0	46.7	44.4	34.7	32.8
Cohabitation	7.6	31.1	35.4	39.7	11.4
Total	100.0	100.0	100.0	100.0	100.0

* Estimate has a high variability and should be interpreted with caution.
** Estimate has a too high variability to be published.
Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1.

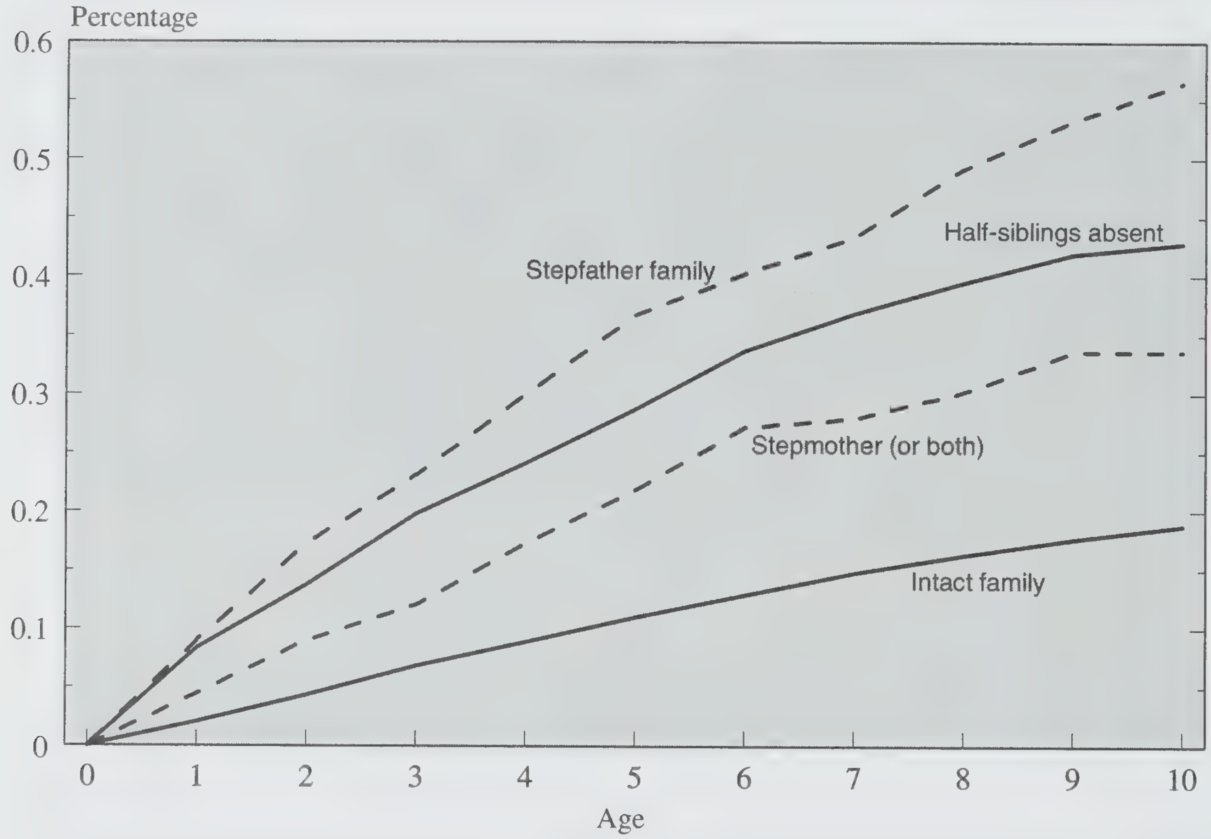
outside the household fall in between, but are much closer to children born in stepfamilies than in intact families in terms of their parents' conjugal union. As expected, the contrast is not quite so extreme in Quebec, where cohabitation is more common as a context for creating a first, intact family, but the trend is perhaps even clearer. In Quebec, direct marriage has all but disappeared as an entry into stepfamily life at the end of the twentieth century even among couples who are committed enough to have a child together. More than three-quarters of babies born in stepfather families had unmarried parents. Even outside Quebec, where few children in intact families (7.6%) were born to cohabiting parents, more than one-third of those born into stepfamilies had parents who had not legalized their union before their birth. The fact that blended families are much more often created outside marriage than are intact families raises the question of their stability, given the greater instability of common-law unions discussed earlier.

- Family Stability

Research has shown that having a child within a stepfamily acts as a protective factor for the family; in other words, stepfamilies that become blended families last longer than those that do not. However, when the same event is considered from the child's perspective, the basis of comparison broadens from stepfamilies to families in general; the relevant question becomes how children born in stepfamilies compare with children born into other family types in terms of family stability. Does the fact that their parents are already fairly advanced along their family life course reduce the likelihood of further family transitions, or, on the contrary, does the previous history of conjugal breakdown bode ill for the current union? Is the association between cohabitation and parental separation as strong among stepfamilies, where common-law unions are very common, as among intact families? Does it make a difference which parent brought children from an earlier union into the family, or how much time the children spend in the household, or how many and how old they are? Some clues to these questions may be gleaned from NLSCY data, which can be used to reconstruct both the family type at birth, and children's subsequent family life experience up to the time of survey.

Life table estimates of the probability that parents will separate suggest a strong link between family environment at birth and the subsequent family life course. Figure 10 shows clearly that ***children born into stepfamilies were more at risk of family breakdown than children born into intact families***. In addition, the experience of children with half-siblings not living in the household was closer to that of children born in stepfamilies than to that of children in intact families from whom they are indistinguishable in terms of the residential family group. ***At ten years of age, 43% of these children had separated parents, more than double the percentage found among children in intact families. Risks of family breakdown varied according to blended family type: children***

Figure 10. Probability of Separation by Family Type at Birth, 1994-1995, Canada



Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1, 1994-1995.

born into stepfather families were most at risk, with a probability of parents separating (56%) that was appreciably higher than among children born into stepmother or stepmother/stepfather families (34%). Compared with children without half-siblings, having maternal half-siblings in the household at a child's birth tripled the risk of experiencing parental separation by the age of 10 (56% vs 19%). Clearly, although there is greater conjugal stability among stepfamily couples who have a child together, the children involved are not guaranteed a stable family life course.

- Analysis of Parental Separation Among Children Born into a Stepfamily

This analysis focuses on differences between children born into intact and blended families, using the four-category variable to classify children's family context at birth; it is based on a sample of 20,071 children born within a two-parent family for whom the pertinent information is complete. The parameter estimates for the full model is presented in Table 5 in their exponential form. Standard errors were adjusted to take into account possible clustering due to children in the sample belonging to the same family.

Table 5. Effect of Socio-demographic Characteristics on the Risk of Experiencing Parental Separation Among Children Born in Two-parent Families, 1994-95 (Proportional Hazards Estimates)[1]

Variable / Category	Coefficient
Family Type at Birth	
Intact family	1.00
Half-siblings not in household	1.95 ***
Blended stepfather family	2.01 ***
Blended stepmother or stepmother / stepfather family	1.25
Region of Residence X / Type of Union at Birth	
Rest of Canada / direct marriage	1.00
Rest of Canada / married after cohabitation	1.82 ***
Rest of Canada / cohabitation	5.71 ***
Quebec / direct marriage	1.16
Quebec / married after cohabitation	1.35
Quebec / cohabitation	3.96 ***
Duration of Union at Birth	
Less than 9 months	1.70 ***
9 to 23 months	1.57 ***
2 to 4 years	1.13
5 years or more	1.00
Type of Previous Parental Unions (Both Parents)	
No previous union	1.00
Marriage only	0.69 **
Cohabitation only	1.24
Marriage and cohabitation	0.91
Birth Cohort	
1982-1988	1.00
1989-1995	1.25 **

[1] The coefficients are (exp ß), with levels of significance: ***: p<.001; **: p<.01; *: p<.05.
Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1.

The dependent variable is the instantaneous rate of separation among the parents of the children in the samples, estimated from the moment of birth. The independent variables are limited to socio-demographic characteristics, as little other information on the situation at the time of birth was collected at the survey. These characteristics include the duration of the union at birth, and the birth cohort of the child. Other important characteristics, such as the age of the mother at the start of the union, could not be included, as this information was not available for the mothers of children living with a stepmother at the survey. Given the importance of the type of parental union at birth for the risk of separation, and the contrast in marital behaviour between Quebec

and the rest of Canada, the type of union was introduced in interaction with the region of residence. Information on earlier unions was also included for two reasons. Firstly, distinguishing between parents who have or who have not lived in earlier unions enables us to control for the strong differences between stepfather families created by single mothers compared with separated/ divorced mothers, discussed earlier. Secondly, a study of NLSCY data suggests that parents' conjugal history preceding the union in which the target child was born may also predict union instability (Juby and Marcil-Gratton, *forthcoming*). A four-category variable, summarising the earlier conjugal history of both parents, was created and included in the model:

a) neither parent had had a previous conjugal union;

b) one or both parents had been married, but never cohabited;

c) one or both parents had cohabited, but never married;

d) one or both parents had married and cohabited.

The analysis presented in Table 5 compares family stability for children in intact families (no half-siblings) with that of children whose half-siblings live elsewhere and with two types of blended family—those including maternal half-siblings only, and those with paternal half-siblings (plus maternal half-siblings in some cases). ***Among children born into "intact" families***, according to the residence-based definition, ***having half-siblings in the family environment doubles the risk of separation compared with children whose parents have no children from earlier unions. In fact, the risk for children whose half siblings live elsewhere is almost as high as that for children born into stepfather families. However, children with paternal half-siblings in the family are not significantly more at risk of experiencing their parents' separation than children in intact families***. These findings support other research on the subject which has demonstrated the greater stability of stepmother over stepfather families (Ambert, 1986; Desrosiers et al.; 1995 Ferri, 1995).

Separation risks were lowest for children to parents who married without previous cohabitation, both within and outside Quebec. Children born in common-law unions were exposed to highest risks of separation in Quebec (3.96) and even more so in the rest of Canada (5.71). Children whose parents lived together before marriage were also more likely to experience their parents' separation, although in Quebec this increase was not significant. In this province, the gap in stability levels between different types of union appears to be getting narrower, and little difference remains between children born to couples who marry directly and those whose parents' lived together before marrying.

The positive effect of marriage on union stability is also reflected in the conjugal history preceding the union in which the target child was born. Even compared with children born to couples with no history of previous unions, those with a parent who had been previously married were less at risk of

family disruption. This rather unexpected result stems from the fact that the "no previous union" category includes mothers whose first child was born outside a union. In order to evaluate the impact of the trajectory leading up to the creation of the family, we carried out a second analysis that included only the 2,855 children with half-siblings in their family environment at birth (not presented). In this model, the "no previous union" category related directly to mothers whose previous child was born outside a union. This permitted us, in other words, to distinguish between the two very different types of stepfather family discussed earlier (i.e. families formed around single *versus* separated or divorced mothers). Our findings showed that children born into stepfamilies created by single mothers appear significantly more at risk of parental separation than children born to parents who had been previously married.

The duration of the union before the baby's birth is a strong predictor of family stability, with unions formed less than two years before the target child's birth significantly more at risk of breakdown than those existing for five years or more. The impact of the period was as expected: children born in the early 1990s were more likely to experience parental separation than those born in the 1980s.

Comparing children born within intact and stepfamilies shows how even half-siblings who are not present in the family influence the probability that children experience the breakdown of their parents' union. It also indicates that the greater stability of stepmother families over stepfather families, reported in the literature, remains even after the stepfamily couple have a child together; children born into stepmother families are significantly less at risk of family disruption than those born into stepfather families. Putting the focus specifically on children with half-siblings in their family environment highlights the link between the earlier conjugal and parental life course of parents and a child's subsequent family life course. Not only is the current union type strongly related to family stability, but the circumstances surrounding the birth of the half-siblings themselves continue to have an impact.

Conclusion

An inevitable consequence of changing marital norms, the blended family is here to stay, and likely to become increasingly common. While not a new family form, in that, in the past, widowed lone parents often remarried and had additional children with their new spouse, the trajectory leading up to the creation of these families is certainly unprecedented. Higher separation rates among couples in intact families mean rising numbers of lone-parents, the units upon which stepfamilies are built. The rising number of stepfamilies formed earlier in the family life course leads directly to the emergence of the blended family, as a high proportion—even the majority—of stepfamily couples decide to cement their relationship by having a child together.

Arising in response to these developments, stepfamily research has tended to oppose stepfamilies to intact families, focusing on their greater fragility and assuming them to be problematic; consequently, stepfamily diversity has been largely ignored (Coleman and Ganong, 1990). The life-course approach taken in this research, however, highlights the great variations in stepfamilies resulting from the complex conjugal and parental histories of both members of the stepfamily couple prior to their union. It shows that, beyond the simple differentiation of stepfamilies according to the sex of the stepparent, it is essential also to take into account the family life course preceding stepfamily formation; stepfather families, for instance, created around young single mothers differ in important respects from those formed around separated or divorced mothers. Taking account of previous family history also provides a new perspective on intact families, uncovering differences that remain hidden by the residence-based definition normally used. In this research, intact families were divided only according to whether or not the children born into them had half-siblings living elsewhere at their birth. However, a third important means of entry into an intact family should also be mentioned here, in that for stable blended families it is likely to constitute the next family transition. When the last of the children from an earlier union grows up and leaves home, the "stepfamily" couple will find themselves living only with children from the current union.

The movement of children in and out of households over time, the fact that siblings may not all share the same living arrangements, and the fact that they can live in more than one household at one time, all create a reality that is difficult to get a handle on. While many problems of definition remain, looking at the stepfamily from the child's rather than the parent's perspective has at least clarified one important aspect. Classifying these new family types as they appear is quite a challenge, but essential for comparative research. At the beginning of the text, we explained our decision to restrict the term "blended family" to stepfamilies in which the parents have a common child. This choice was justified as the research progressed, and the uniqueness of this type of family became increasingly evident. Treating the creation of a blended family as a transition occurring within a stepfamily that creates a genetic link between all members of the family makes it possible to study the specificality of this type of family—a process that is all the more essential given the growing importance of this phenomenon.

Whether or not a stepfamily couple decides to have a child together is strongly influenced by the same factors that determine intact family fertility—mother's age and the age of the youngest child. However, the absence of any significant link with the number of children already present shows that stepfamily fertility decisions are also subject to different forces. Likewise, blended families also have a dynamic all of their own, with a more complex set of family relationships both within and outside the residential group than the intact family. As suggested by Cherlin (1978), stepfamilies are under stress because they lack guidelines for role performance, institutionalised procedures

for dealing with problems, and social support. However, although having a child within the second union may add further complexity to an already complicated system, it is also associated with greater stepfamily stability. Does the fact that the stepparent also assumes the role of biological parent at the birth of the common child restore some level of "institutionalisation" to the blended family?

As a result of changes in conjugal norms, the family experience of children born at the end of the twentieth century bears little resemblance to that of their parents. The novelty, diversity and complexity of the modern family life course present a challenge for parents, children and policy makers alike, and at many different levels. Studies of father/child contact following separation or divorce have shown, for example, that the younger children are when their parent's separate, the less contact they are likely to have with their father; they have also demonstrated a strong link between levels of father/child contact, and the regularity of child support payments. In other words, with parents separating earlier in a child's life, measures need to be taken to encourage the relationship fathers maintain with young children after separation.

Being born into a blended family may expose children to a higher risk of family breakdown than if they had been born to parents in an intact family; however, it also means that they have experienced parents, and at least one brother or sister, something denied to growing numbers of children born into intact families. The question, however, is not whether recent family transformations are positive or negative—the family has always been a vehicle for social change, and continues to be so. The real issue is how best to manage these changes at the individual and social level, in order to ensure children's well-being throughout childhood however simple or complex their family life course.

BIBLIOGRAPHY

Allison, P.D. (1984). ***Event History Analysis: Regression for Longitudinal Event Data***. Beverly Hills, Ca., Sage.

Amato, P.R. (1996). "Explaining the Intergenerational Transmission of Divorce", ***Journal of Marriage and the Family***, 58, pp. 628-640.

Amato, P.R. (1993). "Children's Adjustment to Divorce: Theories, Hypotheses, and Empirical Support", ***Journal of Marriage and the Family***, 55, pp. 23-38.

Ambert, A.-M. (1986). "Being a Stepparent: Live-In and Visiting Stepchildren", ***Journal of Marriage and the Family***, 48, pp. 795-804.

Cherlin, A. (1978). "Remarriage as an incomplete institution", ***American Journal of Sociology***, 84, pp. 634-50.

Cherlin, A. & F.F. Furstenberg (1994). "Stepfamilies in the United-States - A Reconsideration", ***Annual Review of Sociology***, 20, pp. 359-381.

Coleman, M., Ganong, L.H. & C. Goodwin (1994). "The Presentation of Stepfamilies in Marriage and Family Textbooks - A Reexamination", ***Family Relations***, 43, pp. 289-297.

Desrosiers, H., Le Bourdais, C. & B. Laplante (1995). "Les dissolutions d'union dans les familles recomposées: l'expérience des femmes canadiennes", ***Recherches sociographiques***, XXXVI, pp. 47-64.

Ermisch, J.F. & R.E. Wright (1991). "The duration of lone parenthood in Great Britain", ***European Journal of Population***, 7, pp. 129-158.

Ferri, E. (1995). "La recherche sur les familles recomposées en Grande-Bretagne", in Meulders-Klein, M.T. & I. Théry (eds.) ***Quels repères pours les familles recomposées?***, Paris, L.G.D.J. pp. 77-85.

Juby H. & C. Le Bourdais (1996). "Continuity and Change in the Family Life Course", in ***Towards the XXIst Century: Emerging Socio-demographic Trends and Policy Issues in Canada***, proceedings of the 1995 Symposium organized by the Federation of Canadian Demographers, pp. 85-91.

Juby, H. &C. Le Bourdais (1999). "Where Have All the Children Gone? - Comparing Mothers' and Fathers' Declarations in Retrospective Surveys", ***Canadian Studies in Population***, 26, pp. 1-20.

Juby, H. & N. Marcil-Gratton. "It's all in the past? Exploring the links between the family life course of parents and children", part of a joint research project with R.E. Tremblay & B. Boulerice, funded by Human Resources and Development, Canada, ***The impact of parents' conjugal behaviour on their children's cognitive and behavioural development*** (Paper in preparation).

Institut de la Statistique du Québec (2000). Table entitled "Répartition des naissances selon l'état matrimonial de la mère par région administrative" on the ISQ website: *www.stat.gouv.qc.ca.*

Le Bourdais, C., Desrosiers, H. & B. Laplante (1995). "Factors Related to Union Formation Among Single Mothers in Canada", ***Journal of Marriage and the Family***, 57(2), pp. 410-420.

Le Bourdais, C. & N. Marcil-Gratton (1998). "The Impact of Family Disruption in Childhood on Demographic Outcomes in Young Adulthood", in M. Corak (ed.), ***Labour Markets, Social Institutions, and the Future of Canada's Children***, Ottawa, Statistics Canada and Human Resources and Development, Canada, pp. 91-105.

Marcil-Gratton N. & C. Le Bourdais (1999). ***Custody, Access and Child Support: Findings from the National Longitudinal Survey of Children and Youth***, Ottawa, Child Support Team, Department of Justice Canada, Research Report CSR-1999-3E.

Péron, Y., Desrosiers, H., Juby, H., Le Bourdais, C., Lapierre-Adamcyk, E., Marcil-Gratton, N. & J. Mongeau (1999). ***Canadian Families at the Approach of the Year 2000***, Ottawa, Statistics Canada, 1991 Census Monograph Series, catalogue n° 96-321-MPE9804.

Seltzer, J.A. (1994). "Consequences of Marital Dissolution for Children", ***Annual Review of Sociology***, 20, pp. 235-266.

Vikat, A., Thomson, E. & J.M. Hoem (1999). Stepfamily Fertility in Contemporary Sweden: The Impact of Childbearing Before the Current Union. ***Population Studies***, 53, pp. 211-255.

Wineberg, H. (1992). "Childbearing and Dissolution of the Second Marriage", ***Journal of Marriage and the Family***, 54, pp. 879-887.

- *The total fertility rate observed in 1998 (1.54 children per woman) is the lowest ever recorded for the country.*

- *More and more children have to adjust to the presence of a stepparent. Two to three years after a separation, one or both parents of almost half the children of separated couples had entered a new union.*

- *The decrease in mortality due to diseases of the circulatory system after age 60 resulted in gains in life expectancy at that age of 3.4 years and 5.2 years for males and females, respectively.*

- *Life expectancy at age 45 is considerably shorter for smokers compared to non-smokers : for men, a gap of 7 years exists between those two populations, raising to 10 years for women.*

- *At every age and for both sexes, smokers have a greater probability of becoming disabled than non-smokers. Smokers also have a smaller chance of recovering from a disability.*

- *On average, smokers die younger than non-smokers and live a longer period of their life with one or many disabilities.*